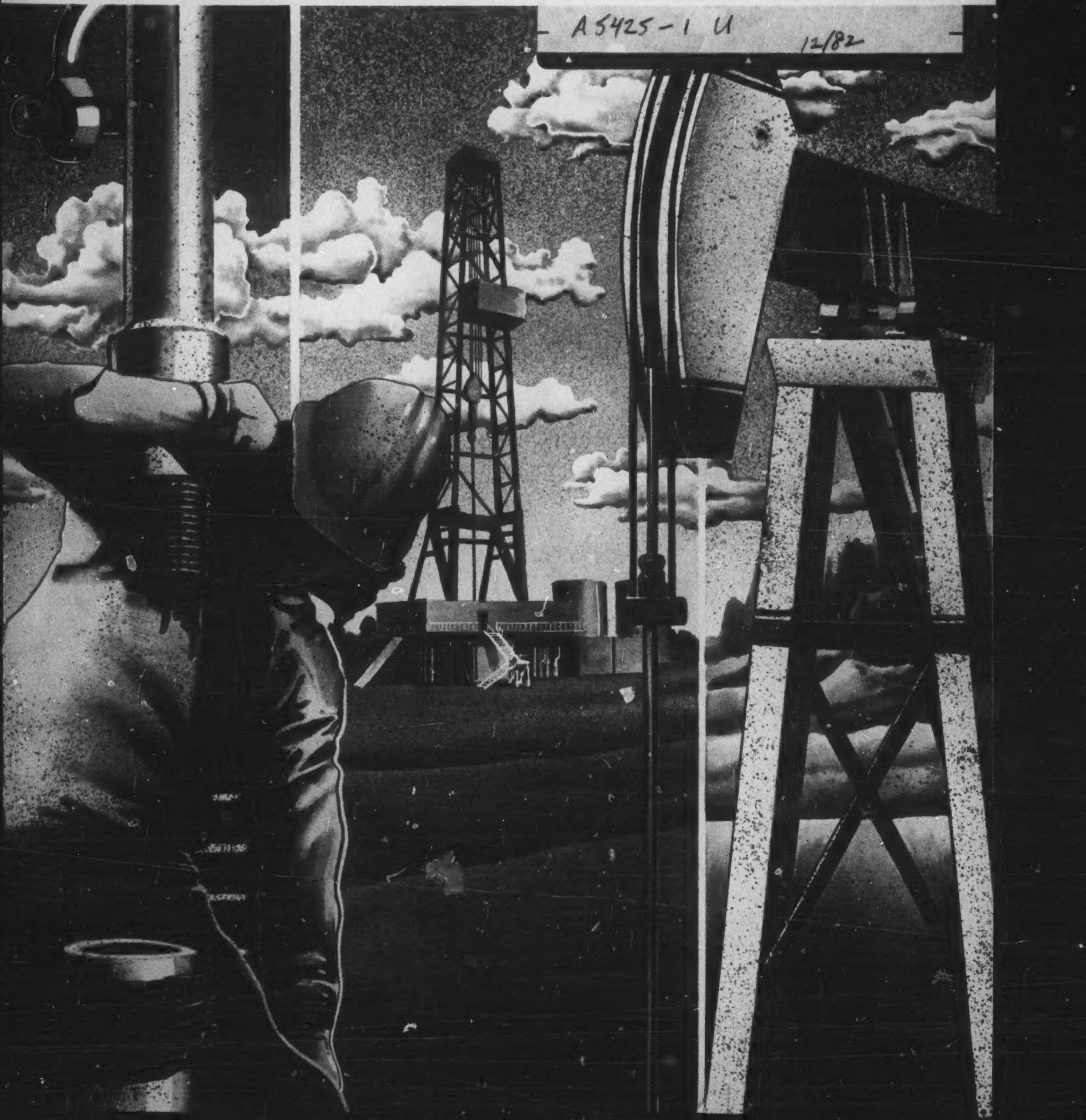
THE OIL PRODUCING INDUSTRY IN YOUR STATE

1982

Independent Petroleum Association of America



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GHK runs 24,325 feet of 9⅞"od 62.80# LSS 125 casing in 33,000-foot Oklahoma test.

This record casing string was run in GHK's Duncan 1-34 deep test near Elk City. Target depth of the well is a record 33,000 feet.

The casing was run in two stages. A 9,369-foot liner was run and cemented, followed by a tieback string of 14,956 feet.

Parker Drilling Company Rig #182 is being used. Jack Sorelle of Falcon Engineering Company is wellsite supervisor for GHK. Nichols Casing Crews, Inc. ran the casing, Torq-N-Turn Consultants, Inc. monitored string makeup.

LSS 125 casing was selected because it provides the required burst strength, collapse resistance and joint strength while retaining a drift diameter that permits an 8½"drillout.

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1982

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COVER ILLUSTRATION
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THE OIL PRODUCING INDUSTRY IN YOUR STATE
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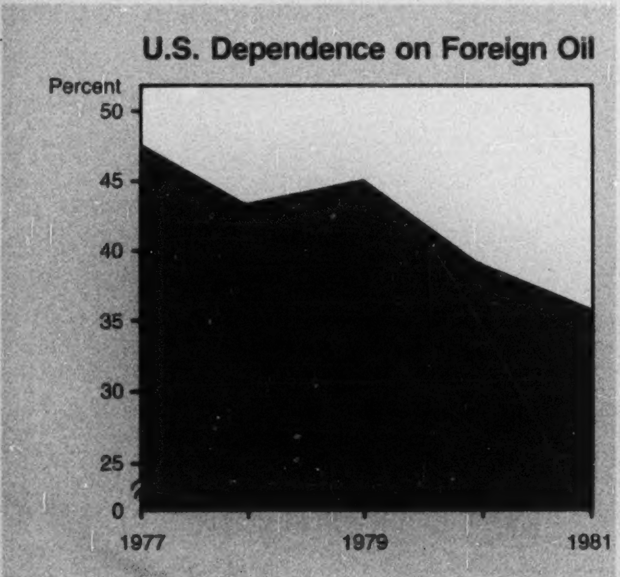
Introduction

Crude petroleum and natural gas are by far the most valuable minerals produced in the United States. Either crude oil or natural gas was ranked first in the total value of mineral production in 16 of the 33 producing states in 1980, the latest year for which this data is available. The Oil Producing Industry in Your State is published annually by the Independent Petroleum Association of America to illustrate the importance of oil and gas production to the economies of the 33 individual producing states and to the United States as a whole.

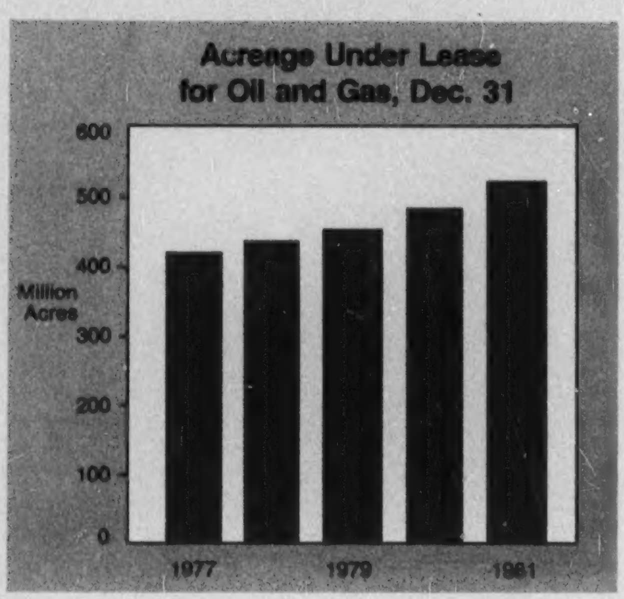
The embargo on oil imports into the United States in 1973 demonstrated beyond any doubt that the United States cannot afford to be dependent on unreliable foreign sources for anything that is vital to our way of life. Our dependence on foreign oil reached a peak of 47.6 percent in 1977 when total petroleum imports averaged 8,787,000 barrels per day and total domestic consumption 18,447,000. As may be noted in the following chart, substantial improvement has taken place since 1977 with our dependency on foreign oil reduced to 35.8 percent in 1981.



The period from 1971 to 1981 will undoubtedly go down in history as a great recovery period for the domestic petroleum industry. Improved prices have been reflected in the sharpest increase in drilling activity that the industry has ever known. During this period the number of rotary rigs drilling for oil and gas has increased from less than 1,000 in 1971 to almost 4,000 in 1981, a four-fold increase. The total number of wells completed increased from 27,300 to a record 80,537 and total footage drilled from 128 million to 366 million feet. The steady decline in petroleum reserves which had prevailed for many years was halted and there was a small increase in total crude and natural gas liquids reserves in 1980. The contributions to this record recovery by the various producing states are detailed in the following individual pages.

One series of statistical data, unique to this publication, is that pertaining to the total acreage under lease for oil and/or gas in the various producing states. This acreage under lease figure has increased from about 350 million acres, at the end of 1971, to almost 523 million acres on January 1, 1982. This is equivalent to more than 23 percent of the entire land area of the United States. Of this total acreage under lease, about 73 million has been proven to be productive and the remaining 450 million acres are in non-productive areas waiting to be tested for possible future oil and gas production. With regard to the individual state data, it is interesting to note that in seven states more than 50 percent of the entire land area is under lease. In 15 of the remaining states, between 25 and 50 percent of the entire land area is under lease. Trends in total U.S. acreage under lease since 1971 are shown in the following chart.

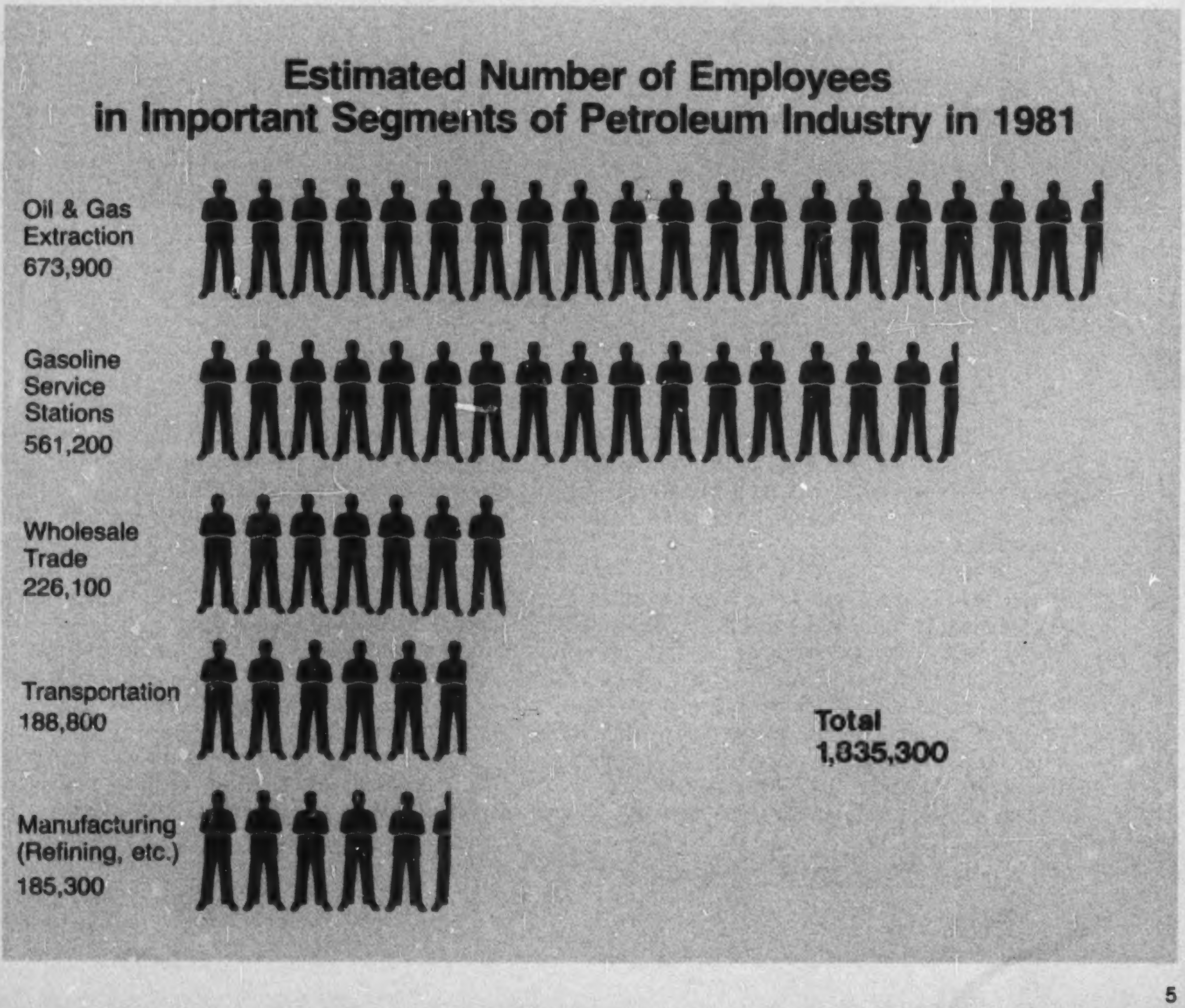
Another series of figures collected by IPAA for publication in this book pertains to the total number of employees in various segments of the industry. Although not complete, data for the more important segments of the industry which are available add to a total of more than 1,835,000 employees. This compares with a total of 1,762,000 in 1980. With our nation continuing to have unemployment problems it is significant to note



that employment in the petroleum industry has increased steadily during recent years. This is another indication of the important contributions made by the petroleum industry to the economies of each of our producing states and to the U.S. as a whole. The following chart shows a breakdown for the more important segments for which data is available.

In addition to the above mentioned statistical series, there are a number of tables in the book which summarize data such as production, wells drilled, rotary rigs active, etc. for the past decade. There are also tables showing consumption of various petroleum products, geophysical activity, etc.

It is the sincere hope of IPAA that readers of this book will find the data useful as a source of information about the oil and gas producing industry in the U.S. If there are any questions regarding the book, please direct them to the Association and every effort will be made to provide answers.



Sunrise. Or Sunset?

It all depends on your outlook. At Continental Emsco, we see it as the beginning of a bright new tomorrow. Not as the end of a day. Because we have an optimistic attitude about the energy business.

And we should. We've been around for more than 70 years and we've seen our industry through both its highs and lows. We've enjoyed the feast and we'll survive the famine.

We're able to ride out the rough times because we're a solid company, built on a foundation of quality, service and dependability. And we didn't take the money we made during the good times and run. We've put all our energy back into the energy business.

Over the years, we've developed products to improve drilling performance and manufactured equipment for more efficient oil and gas production. And we've organized the best sales and supply network in the field, too.

Consequently, we now enjoy the reputation of being one of the largest fully-integrated manufacturers and suppliers of oil field equipment and services in the world. And we're proud to say that each of our four groups have made substantial contributions to the growth and development of the industry.

For example, our Production Equipment Group provides a wide range of products and services. Including sucker rods, subsurface

pumps and a variety of liquid transfer systems. We even offer centrifugally cast reinforced fiberglass piping systems for the chemical processing and pollution control industries.

Offering a single source and full-service capability, our Tubular Group is one of the country's largest oil country tubular goods distributors. On hand, are tubing, casing and drill pipe from Jones & Laughlin Steel and other leading sources. Plus, we offer threading and testing of tubular goods.

Meanwhile, our Drilling Equipment Group manufactures complete drilling rigs and components for both land-based and offshore operations. In addition, this group provides pedestal cranes, mooring systems and mobile well servicing and workover rigs.

We also provide the broadest range of top-quality merchandise for the day-to-day operations of the oil patch through our Supply Store Network. In fact, with 117 stores, we operate one of the largest supply store networks in the industry.

The point is, Continental Emsco is committed to the energy industry. And with your continued support, we'll all enjoy many more bright todays.

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SOURCES OF DATA

The data in this publication have been collected from various published sources including, where necessary, estimates based on the best information available. The individual sources, to which credit is gratefully acknowledged, are as follows:

Data Re Producing States

Line No.	
1	World Almanac
2	Various state and industry sources
3	World Almanac
4-5	Estimated by IPAA from various state and industry sources such as Petroleum Information Corporation
6	Sum of lines 4 and 5 divided by line 3
7-10	Estimated by IPAA
11	Sum of lines 9 and 10
12-13	U.S. Department of Energy based on 1980 values
14	State Agencies cooperating with the U.S. Bureau of Labor Statistics
15-16	Energy Information Administration, World Oil, Arnold & Kemnitzer, World Petroleum Report, AIME Statistical Yearbook
17	Society of Exploration Geophysicists
18-19	Energy Information Administration, World Oil, Arnold & Kemnitzer, World Petroleum Report, AIME Statistical Yearbook
20	Stripper Well Report, Interstate Oil Compact Commission and National Stripper Well Association: based on 1980 production
21-23	World Oil and other industry sources
24	Energy Information Administration except some small states estimated by IPAA and 1981 Natural Gas Liquids Production calculated by IPAA
25-26	American Petroleum Institute and American Gas Association and U.S. Department of Energy
27	Hughes Tool Company
28-29-30	World Oil and American Petroleum Institute
31	World Petroleum Statistical Yearbook, Oil and Gas Journal, International Oil Scouts Association, American Petroleum Institute

Individual state data may not add to United States total in all cases since data for some miscellaneous states are not available.

CONVERSION FACTORS FOR ENERGY

Btu Equivalents: Oil, Gas, Coal and Electricity

One British thermal unit (Btu)
= the quantity of heat required to raise the temperature of one pound of water (approximately one pint) one degree Fahrenheit at or near its point of maximum density.

One barrel (42 gallons) of crude oil
= 5,800,000 Btu's of energy
= 5,614 cubic feet of natural gas
= 0.22 tons of bituminous coal
= 1,700 kw hours of electricity

One cubic foot of natural gas
= 1,032 Btu's of energy
= .000178 barrels of oil
= .000040 tons of bituminous coal
= 0.30 kw hours of electricity

One short ton (2,000 pounds) of bituminous coal
= 26,200,000 Btu's of energy
= 4.52 barrels of oil
= 25,314 cubic feet of natural gas
= 7,679 kw hours of electricity

One Kilowatt (kw) hour of electricity
= 3,412 Btu's of energy
= .000588 barrels of oil
= 3.306 cubic feet of natural gas
= .00013 tons of bituminous coal

U.S. Volume Equivalents

One barrel = 42 gallons
= 5,614 cubic feet

One gallon = 231 cubic inches
= .0238 barrels

one cubic foot = 7.48 gallons
= .000178 barrels

Metric Conversions

One metric ton of crude oil
= 2,204 pounds
= 7.46 barrels of domestic oil
= 6.99 barrels of foreign oil

One cubic meter of natural gas
= 35.314 cubic feet

One cubic meter of liquid
= 6.2888 barrels

One liter of liquid
= 1.057 quarts

KEY DEFINITIONS

CRUDE OIL — Hydrocarbons, in liquid form, of such a variety of mixtures that no two are the same. The two major categories are sour, with 1 percent or more sulfur, and sweet, with less sulfur.

NATURAL GAS — Hydrocarbons, in gaseous form or mixed with crude oil, classified as associated, dissolved, or non-associated.

NATURAL GAS LIQUIDS — Hydrocarbons found with natural gas and liquefy at the surface.

RESERVOIR — Rock, within a sedimentary basin, of such porous space as to permit oil or natural gas and water to move freely. The hydrocarbons are found within the reservoirs in local accumulations known as traps.

FIELD — An area which consisting of a single or multiple reservoirs encompasses a group of oil and gas wells.

GEOPHYSICAL ACTIVITY — The search for those geologic structures which are potential petroleum bearing formations by means of geophysical devices.

CREW MONTHS — Time measure of the geophysicist search for petroleum.

ACREAGE UNDER LEASE — The amount of land leased by the owner (private citizen, state or federal government) for the search for petroleums. If the acreage leased proves productive, the leasee must also pay to the mineral-rights owner a Royalty Payment, usually 1/6 to 1/8 of actual production.

DERRICK — A tapering tower (of open steel framework today) built over a well site to provide support for the drilling equipment.

ROTARY RIG — A derrick equipped with rotary drilling equipment capable of drilling a bore hole (as opposed to a cable tool rig which drills on the percussion principle).

WELL — A hole drilled to find or produce crude oil or natural gas or to provide related services. It is classified as oil, gas, dry, stratigraphic, or service.

EXPLORATORY WELL — Either an oil, gas, or dry hole drilled to discover an oil bearing formation or its limits.

DEVELOPLMENT WELL — Either an oil, gas, or dry hole drilled in an area known to be productive.

OIL WELL — An exploratory or development hole drilled for the production of crude oil.

GAS WELL — An exploratory or development hole drilled for the production of natural gas.

DRY HOLE — An exploratory or development hole which produces no oil or gas or so little as to make it financially impossible to complete. Also known as a 'duster.'

NEW FIELD WILDCAT WELL — One of the five subdivisions of an exploratory well, a new field wildcat well is one drilled in an area where there has been no previous production. Named such, according to lore, because wildcat referred to an area where the only inhabitants were wildcats.

STRIPPER WELL — A well which pumps or 'strips' less than 10 barrels of oil per day.

MARGINAL WELL — A well which is capable of production only by artificial lift and whose production when so equipped is limited.

COMMERCIAL WELL — A well whose net production is sufficient that it could be expected to pay out and yield a profit for the operator within a reasonable time.

OIL COUNTRY TUBULAR GOODS — Casing, tubing, and drill pipe used in drilling for producing hydrocarbons.

BARREL — The standard measure for petroleum. Originated from the early method of transporting oil in the 1860's by means of a wooden barrel. In the United States one barrell is equal to 42 U.S. Gallons; a Canadian barrel is equal to 35 Imperial gallons.

CUBIC FEET — The standard measure for natural gas.

PIPELINE — A tube or system of tubes which transports oil or gas in an extremely economical and easy method because the petroleum can go from the well to storage tank or to the refinery.

TANKER — An ocean-going ship which hauls crude oil or petroleum products in bulk and whose size is measured in deadweight tons (DWT), the total tonnage (in long tons) of cargo, fuel, water, and stores the ship can carry. The size of a tanker has grown with the demand: up to the 1950's the T-2 with 16,500 DWT capacity was standard; today Very Large Crude Carriers (VLCCs) with 200,000 DWT and Ultra Large Crude Carriers (ULCCs) with 350,000 tons are used (one long ton = 7.5 barrels).

REFINERY — A plant for separating crude oils and converting these major components into finished products.

PRODUCT — Any commodity made from oil or gas.

All credit for the above definitions is given to the following sources: American Petroleum Institute, "Standard Definitions for Petroleum Statistics," 1st Ed.; Langenkamp, R. D., "Handbook of Oil Industry Terms and Phrases;" Mobil Oil, "The Language of Oil," and Williams, H. R. and C. J. Myers, "Manual of Oil and Gas Terms," 2nd Ed.

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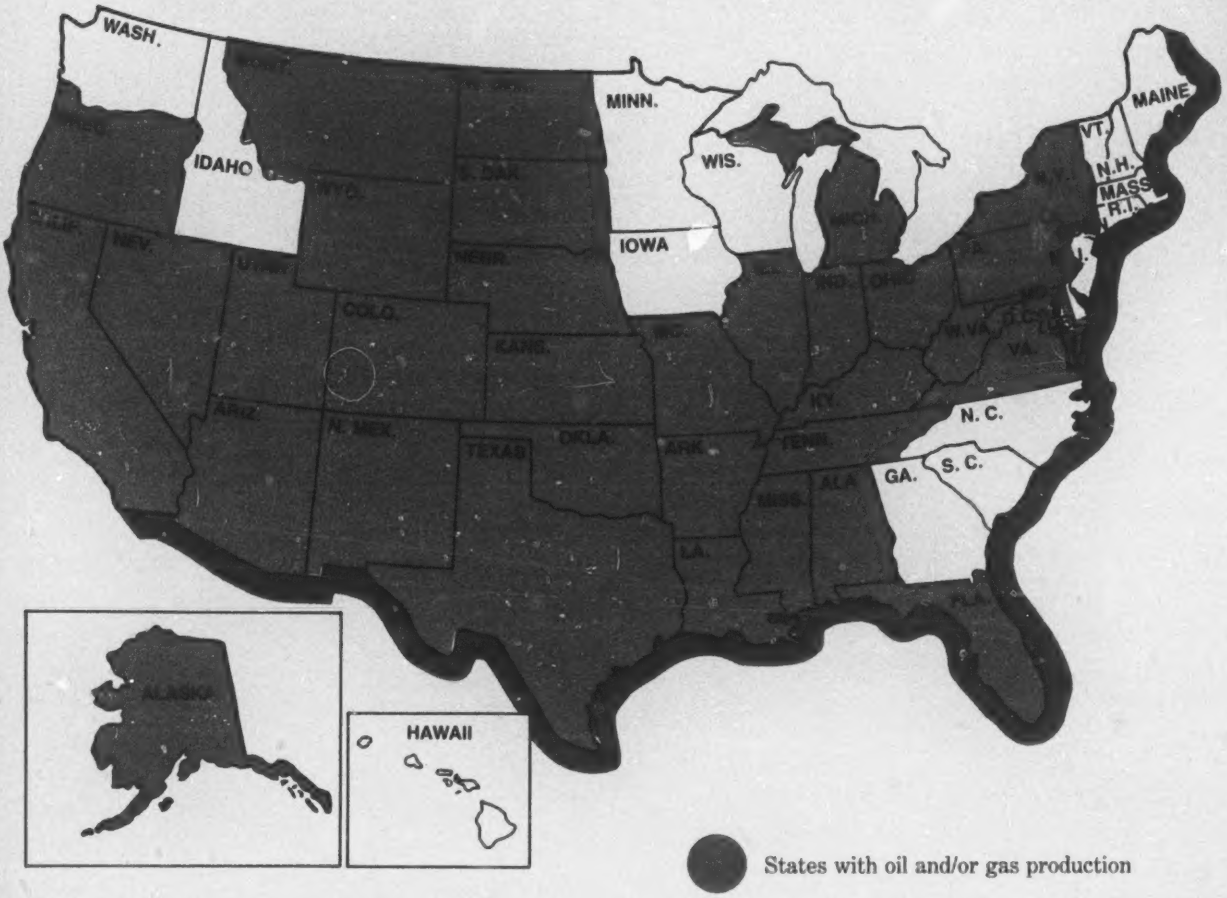
The Oil Producing Industry in the UNITED STATES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GA.
ALA.
MISS.
LA.
FLA.
ALASKA
HAWAII
● States with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of States	50
2.	Number of States with oil and/or gas production	33
3.	Total land area (acres)	2,263,587,200
4.	Area proved productive of oil and/or gas (acres)	73,060,033
5.	Estimated non-productive area leased January 1, 1982 (acres)	449,458,595
6.	Percent of total land area productive or leased	23.1
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$583,590,962
8.	Average field price of crude oil per barrel in 1981	$ 31.72
9.	Value at wells of crude oil produced in 1981 (Thous.)	$100,414,981
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 40,640,375
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$141,055,356
12.	Percent petroleum value to total all minerals	58.2%

13.	Principal mineral products in order of value:		
	1st	Crude Petroleum	
	2nd	Natural Gas	
	3rd	Coal	
14.	Number of employees engaged in crude oil and natural gas production		673,940
15.	First year of production of crude oil		1859
	natural gas		1881
16.	First recorded production of crude oil (barrels)	1859	2,000
	natural gas (Mcf)	1881	600,000
17.	Geophysical Activity—Crew months worked in 1981		5,421

Production & Reserves

18.	Year of largest production (crude oil)	1970
19.	Crude oil produced in year of largest production (barrels)	3,517,450,000
20.	Percent of crude oil produced by stripper wells	12.8%

21.	Number of producing wells at end of 1981: Crude Oil	557,009
	Gas & Gas Distillate	189,609
	Total	746,618
22.	Average daily production of crude oil per well at end of 1981	15.4
23.	Percent of wells pumping or on artificial lift	93.2%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	8,707,441	1,567,359	10,274,800
1979	8,551,534	1,583,625	10,135,159
1980	8,597,046	1,563,300	10,160,346
1981	8,574,397	1,588,000*	10,162,397

*Estimated

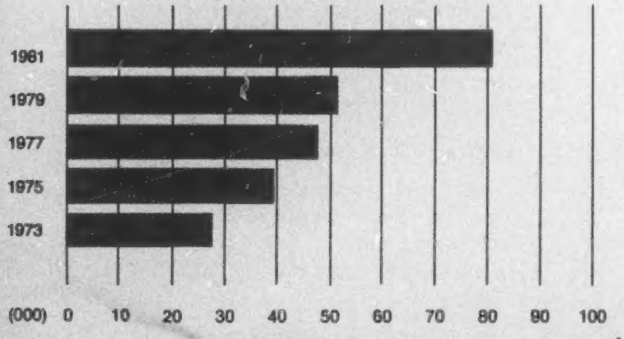
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	2,970	844	3,814	17,424
Estimated Production	2,975	731	3,706	19,500
Net Change in Reserves	−5	113	108	−2,076

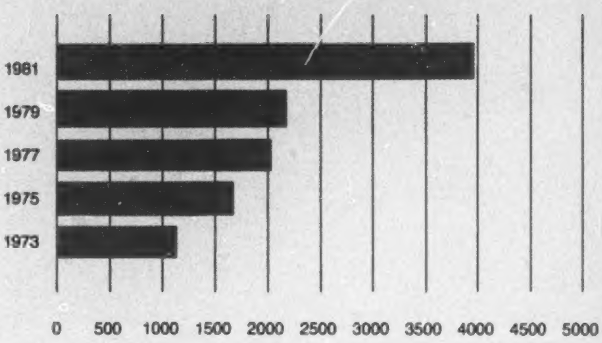
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	157,443	26,642	184,085	802,791
Total Production	127,638	19,914	147,552	596,532
Proved Reserves Dec. 31, 1980	29,805	6,728	36,533	206,259

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		3,970
28.	Deepest producing well drilled to January 1, 1982	*Gas*	26,518
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	31,441

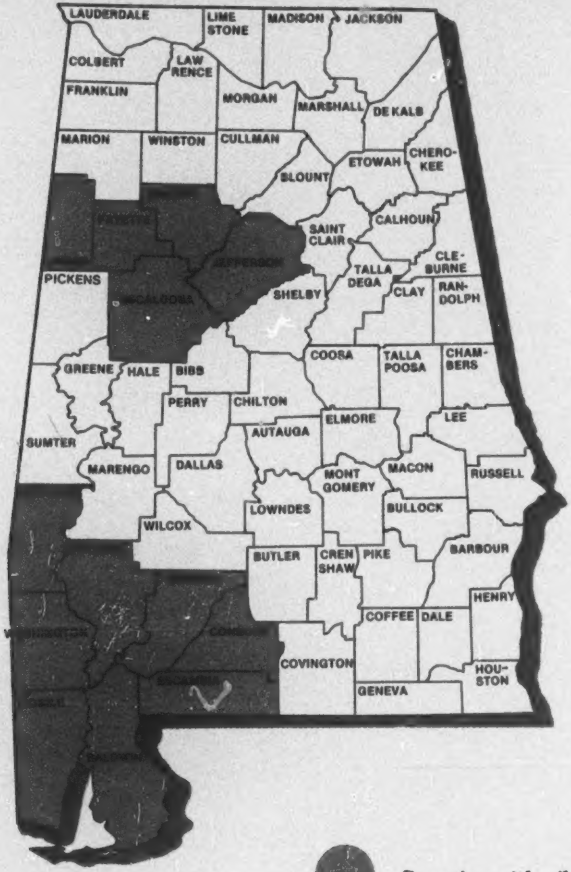
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	2,219	14.6
Gas Wells	2,366	15.6
Dry Wells	10,583	69.8
Service Wells	0	0
Total Wells	15,168	100.0
Average Depth per well	5,873	
Total Footage	89,087,222	
Development Wells		
Oil Wells	35,452	54.2
Gas Wells	15,528	23.8
Dry Wells	12,390	19.0
Service Wells	1,999	3.0
Total Wells	65,369	100.0
Average Depth per well	4,240	
Total Footage	277,161,908	
Total Wells		
Oil Wells	37,671	46.8
Gas Wells	17,894	22.2
Dry Wells	22,973	28.5
Service Wells	1,999	2.5
Total Wells	80,537	100.0
Average Depth per well	4,548	
Total Footage	366,249,130	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	1,549,465	58.1
Gas	298,551	11.2
Dry	818,119	30.7
Total	2,666,135	100.0

The Oil Producing Industry in ALABAMA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COFFEE
DALE
ESCAMBIA
COVINGTON
HOU-STON
GENEVA
BALDWIN

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	67
2.	Number of Counties with oil and/or gas production	13
3.	Total land area of State (acres)	32,453,120
4.	Area proved productive of oil and/or gas (acres)	183,076
5.	Estimated non-productive area leased January 1, 1982 (acres)	9,000,000
6.	Percent of total land area productive or leased	28.3
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 2,586,936
8.	Average field price of crude oil per barrel in 1981	$ 35.51
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 734,347
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 279,615
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 1,013,962
12.	Percent petroleum value to total all minerals	33.8%
13.	Principal mineral products in order of value:	
	1st	Coal
	2nd	Crude Petroleum
	3rd	Natural Gas
14.	Number of employees engaged in crude oil and natural gas production	2,176
15.	First year of production of crude oil	1944
	natural gas	1904
16.	First recorded production of crude oil (barrels) 1944	43,000
	natural gas (Mcf) 1953	5,000
17.	Geophysical Activity—Crew months worked in 1981	156

Production & Reserves

18.	Year of largest production (crude oil)	1980
19.	Crude oil produced in year of largest production (barrels)	22,153,000
20.	Percent of crude oil produced by stripper wells	0.6%

21. Number of producing wells at end of 1981:

Crude Oil	692
Gas & Gas Distillate	309
Total	1,001

22. Average daily production of crude oil per well at end of 1981 .... 88.7

23. Percent of wells pumping or on artificial lift 88.5%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	54,326	3,001*	57,337
1979	52,496	9,588*	62,130
1980	60,527	8,400*	69,927
1981	56,658	9,500*	66,158

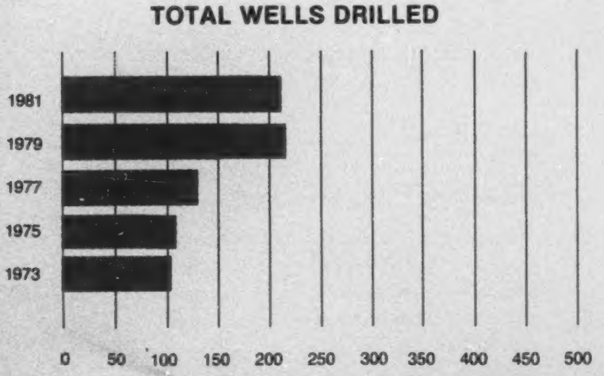
*Estimated

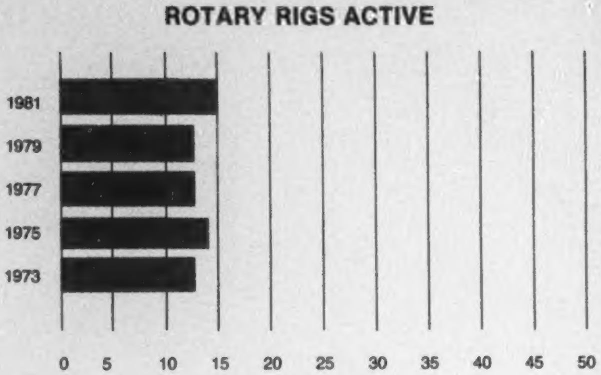
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	18	28	46	57
Estimated Production	9	15	24	68
Net Change in Reserves	9	13	22	-11

26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	272	287	559	995
Total Production	218	61	279	313
Proved Reserves Dec. 31, 1980	54	226	280	682


TOTAL WELLS DRILLED


ROTARY RIGS ACTIVE

Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		15
28.	Deepest producing well drilled to January 1, 1982	*Gas*	20,926
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	21,113

30. Wells and footage drilled in 1981:

	Number	Percent
Wildcat Wells		
Oil Wells	4	5.3
Gas Wells	10	13.1
Dry Wells	62	81.6
Service Wells	0	0
Total Wells	76	100.0
Average Depth per well	6,427	
Total Footage	488,447	
Development Wells		
Oil Wells	35	25.7
Gas Wells	39	28.7
Dry Wells	59	43.4
Service Wells	3	2.2
Total Wells	136	100.0
Average Depth per well	5,324	
Total Footage	724,055	
Total Wells		
Oil Wells	39	18.4
Gas Wells	49	23.1
Dry Wells	121	57.1
Service Wells	3	1.4
Total Wells	212	100.0
Average Depth per well	5,719	
Total Footage	1,212,502	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	Percent
Oil	802	25.2
Gas	447	14.1
Dry	1,929	60.7
Total	3,178	100.0

More and more energy [illegible] have learned that The First [illegible] source for financing. We [illegible] provide more assistance to the state's energy industry than any other financial institution.

The reason is not hard to discern. We have unequalled resources and a willingness to put those resources to work. So [illegible] that all facets of the industry are represented in our [illegible] Exploration [illegible] the basis [illegible]

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The only thing better than our service is not needing it.

Of all the promises being made by pumping unit manufacturers today, the "quick parts and service" promise is the hardest to keep. That's what we've learned after 60 years in the business.

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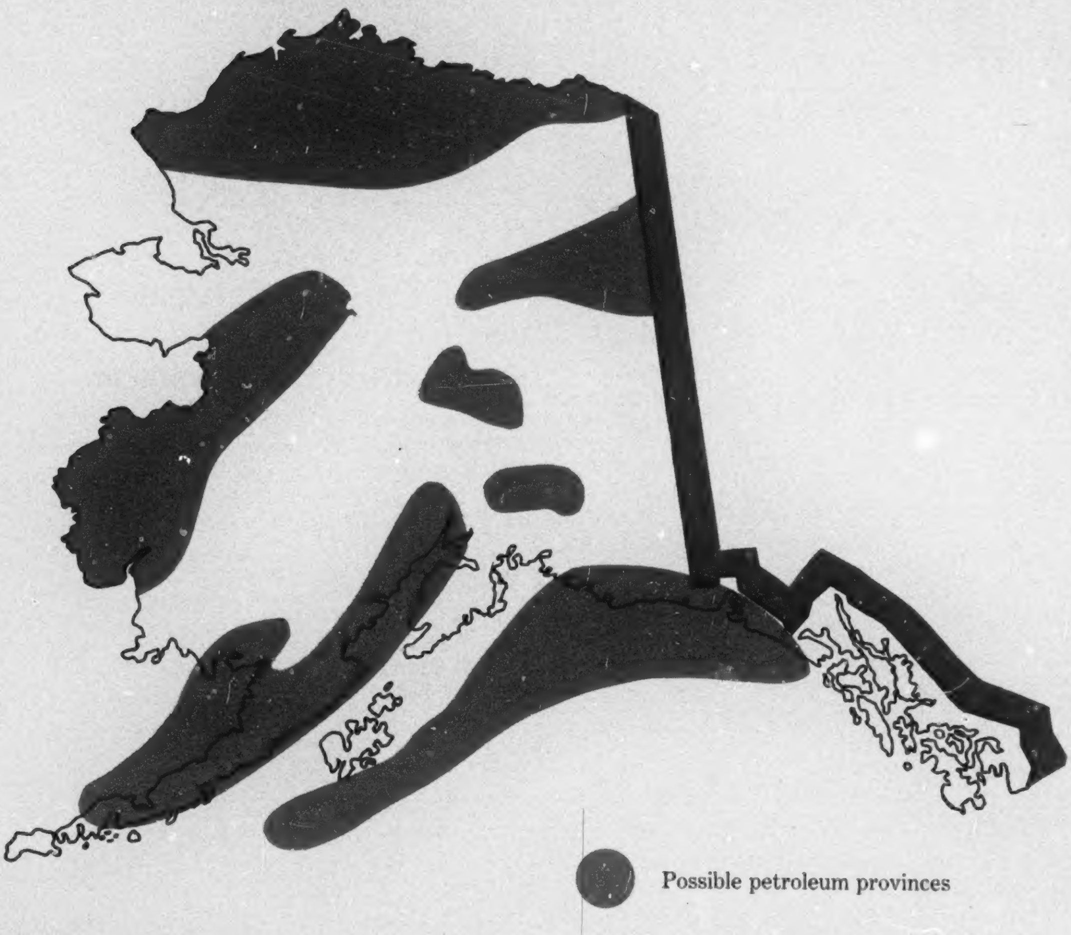
The Oil Producing Industry in ALASKA



Extent & Economic Value of Industry

1.	Number of Counties	Not Applicable
2.	Number of Counties with oil and/or gas production	Not Applicable
3.	Total land area of State (acres)	362,516,480
4.	Area proved productive of oil and/or gas (acres)	451,340
5.	Estimated non-productive area leased January 1, 1982 (acres)	3,680,000
6.	Percent of total land area productive or leased	1.1
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 25,410,689
8.	Average field price of crude oil per barrel in 1981	$ 23.92
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 14,091,365
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 230,375
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 14,321,740
12.	Percent petroleum value to total all minerals	98.7%

13. Principal mineral products in order of value:

1st	Crude Petroleum
2nd	Natural Gas
3rd	Sand & Gravel

14.	Number of employees engaged in crude oil and natural gas production		7,064
15.	First year of production of crude oil		1905
	natural gas		1945
16.	First recorded production of crude oil (barrels)	1921	10
	natural gas (Mcf)	1959	135,000
17.	Geophysical Activity—Crew months worked in 1981		82

Production & Reserves

18.	Year of largest production (crude oil)	1980
19.	Crude oil produced in year of largest production (barrels)	591,684,000
20.	Percent of crude oil produced by stripper wells	Not Available

21. Number of producing wells at end of 1981:

Crude Oil	700
Gas & Gas Distillate	120
Total	820

22. Average daily production of crude oil per well at end of 1981 .... 2,300.7

23. Percent of wells pumping or on artificial lift 57.7%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	1,229,096	2,515*	1,231,611
1979	1,400,918	1,644*	1,402,562
1980	1,616,519	1,300*	1,617,819
1981	1,609,140	1,300*	1,610,440

*Estimated

25. Production and new reserves found in 1980:

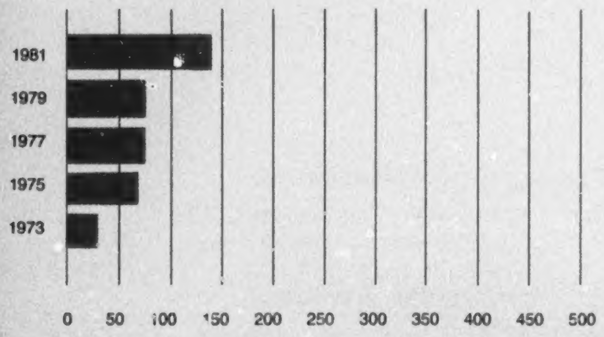
	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	467	−12**	455	1,333
Estimated Production	591	N.A.	591	213
Net Change in Reserves	−124	−12	−136	1,120

**Downward Revision of Previous Estimate

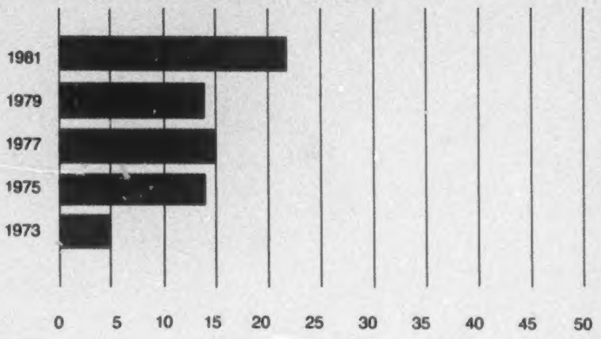
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	11,217	19	11,236	25,526
Total Production	2,466	8	2,474	2,131
Proved Reserves Dec. 31, 1980	8,751	11	8,762	23,395

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 22

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 14,996

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 20,335

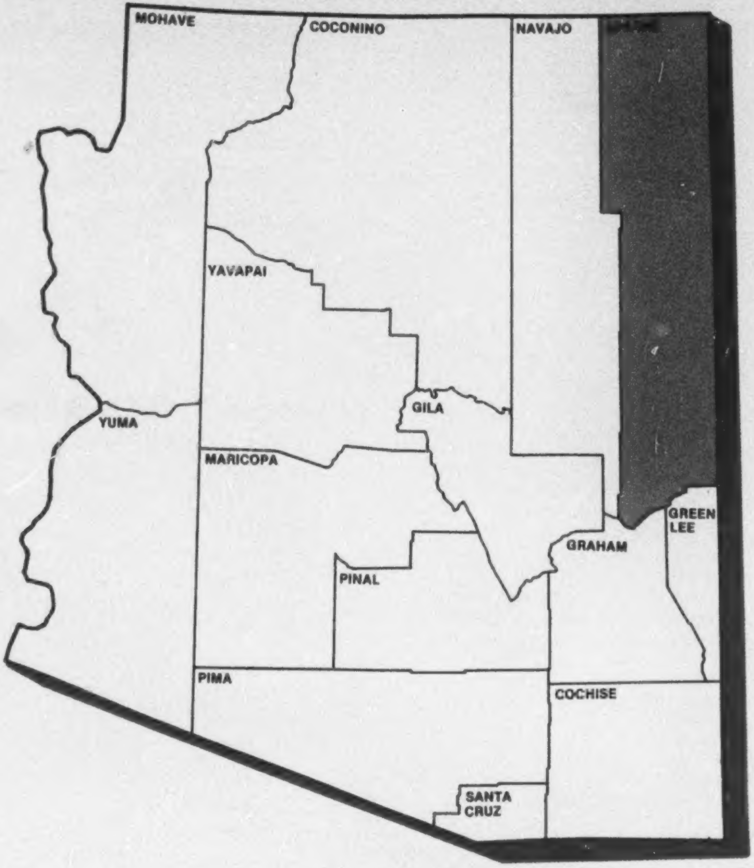
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	4	20.0
Gas Wells	3	15.0
Dry Wells	13	65.0
Service Wells	0	0
Total Wells	20	100.0
Average Depth per well	10,293	
Total Footage	205,855	
Development Wells		
Oil Wells	116	95.9
Gas Wells	1	0.8
Dry Wells	1	0.8
Service Wells	3	2.5
Total Wells	121	100.0
Average Depth per well	9,964	
Total Footage	1,205,645	
Total Wells		
Oil Wells	120	85.1
Gas Wells	4	2.8
Dry Wells	14	9.9
Service Wells	3	2.2
Total Wells	141	100.0
Average Depth per well	10,011	
Total Footage	1,411,500	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	877	61.5
Gas	103	7.2
Dry	446	31.3
Total	1,426	100.0

The Oil Producing Industry in ARIZONA



● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		14
2.	Number of Counties with oil and/or gas production		1
3.	Total land area of State (acres)		72,586,880
4.	Area proved productive of oil and/or gas (acres)		6,200
5.	Estimated non-productive area leased January 1, 1982 (acres)		20,140,000
6.	Percent of total land area productive or leased		27.8
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	61,449
8.	Average field price of crude oil per barrel in 1981	$	34.95
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	1,248
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	—
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	1,248
12.	Percent petroleum value to total all minerals		0.2%

13. Principal mineral products in order of value:

1st	Copper
2nd	Coal
3rd	Molybdenum

14.	Number of employees engaged in crude oil and natural gas production		145
15.	First year of production of crude oil		1954
	natural gas		1955
16.	First recorded production of crude oil (barrels)	1958	12,000
	natural gas (Mcf)	1958	36,000
17.	Geophysical Activity—Crew months worked in 1981		33

Production & Reserves

18.	Year of largest production (crude oil)	1968
19.	Crude oil produced in year of largest production (barrels)	3,370,000
20.	Percent of crude oil produced by stripper wells	3.9%

21.	Number of producing wells at end of 1981: Crude Oil	35
	Gas & Gas Distillate	0
	Total	35
22.	Average daily production of crude oil per well at end of 1981	28.6
23.	Percent of wells pumping or on artificial lift	100.0%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	1,145	0	1,145
1979	1,293	0	1,293
1980	1,109	0	1,109
1981	978	0	978

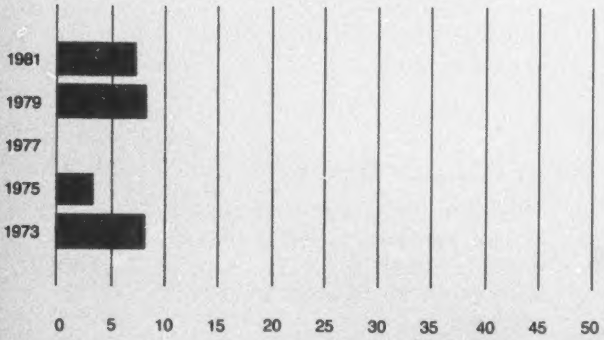
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	Not Available			
Estimated Production				
Net Change in Reserves				

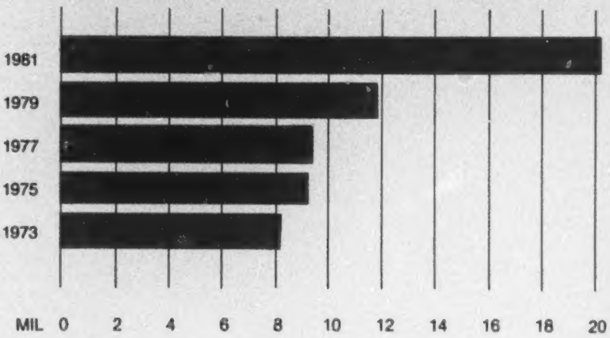
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	Not Available			
Total Production				
Proved Reserves Dec. 31, 1980				

TOTAL WELLS DRILLED



ACREAGE UNDER LEASE FOR OIL AND GAS



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		1
28.	Deepest producing well drilled to January 1, 1982	*Oil*	6,793
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	18,013

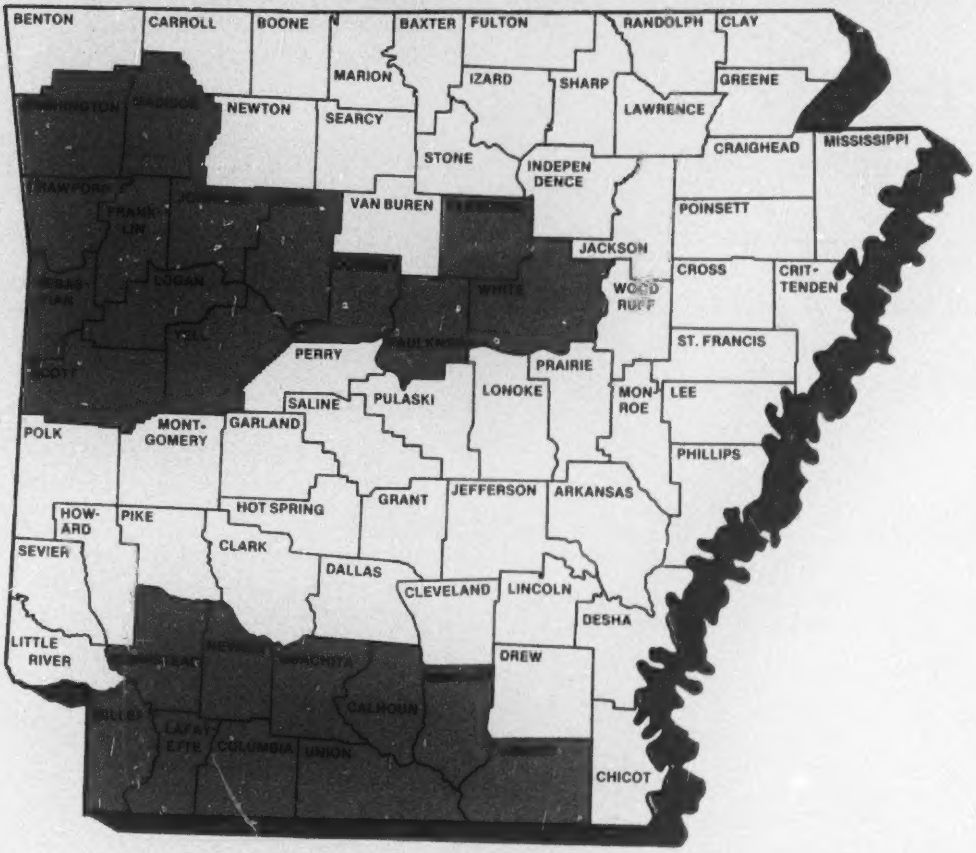
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	6	100.0
Service Wells	0	0
Total Wells	6	100.0
Average Depth per well	6,454	
Total Footage	38,721	
Development Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	1	100.0
Total Wells	1	100.0
Average Depth per well	2,400	
Total Footage	2,400	
Total Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	6	85.7
Service Wells	1	14.3
Total Wells	7	100.0
Average Depth per well	5,874	
Total Footage	41,121	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	46	10.3
Gas	34	7.6
Dry	367	82.1
Total	447	100.0

The Oil Producing Industry in ARKANSAS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OUACHITA
HEMPSTEAD
DREW
CALHOUN
MILLER
LAFAYETTE
COLUMBIA
UNION
CHICOT

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	75
2.	Number of Counties with oil and/or gas production	25
3.	Total land area of State (acres)	33,244,800
4.	Area proved productive of oil and/or gas (acres)	1,140,960
5.	Estimated non-productive area leased January 1, 1982 (acres)	9,000,000
6.	Percent of total land area productive or leased	30.5
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 4,742,302
8.	Average field price of crude oil per barrel in 1981	$ 33.96
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 640,180
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 104,215
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 744,395
12.	Percent petroleum value to total all minerals	66.5%
13.	Principal mineral products in order of value:	
	1st	Crude Petroleum
	2nd	Natural Gas
	3rd	Crushed Stone
14.	Number of employees engaged in crude oil and natural gas production	3,994
15.	First year of production of crude oil	1921
	natural gas	1889
16.	First recorded production of crude oil (barrels) 1921	10,473,000
	natural gas (Mcf) 1906	21
17.	Geophysical Activity—Crew months worked in 1981	67

Production & Reserves

18.	Year of largest production (crude oil)	1925
19.	Crude oil produced in year of largest production (barrels)	77,398,000
20.	Percent of crude oil produced by stripper wells	31.2%

21. Number of producing wells at end of 1981: Crude Oil 8,249
Gas & Gas Distillate 1,337
Total 9,586

22. Average daily production of crude oil per well at end of 1981 .... 6.2

23. Percent of wells pumping or on artificial lift 98.1%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	55,696	1,564	57,260
1979	51,696	2,740*	54,430
1980	49,754	3,000*	52,754
1981	51,647	3,000*	54,647

*Estimated

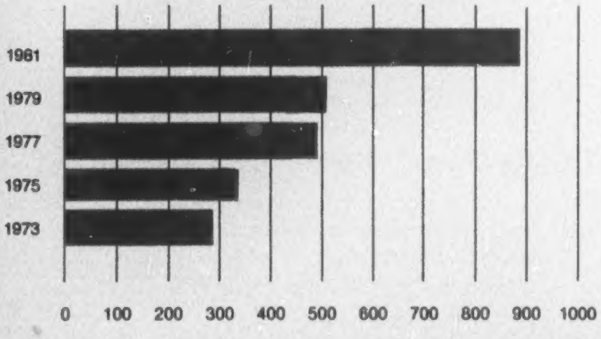
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	16	0	16	189
Estimated Production	16	1	17	118
Net Change in Reserves	0	−1	−1	71

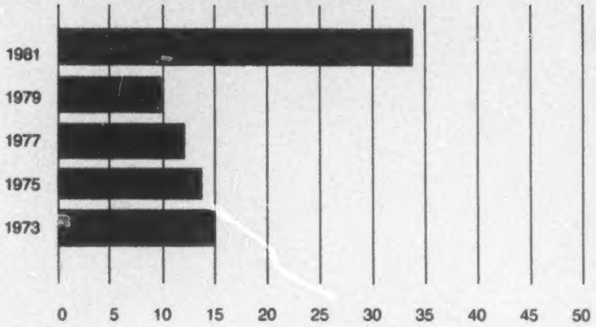
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	1,608	91	1,699	5,407
Total Production	1,501	75	1,576	3,611
Proved Reserves Dec. 31, 1980	107	16	123	1,796

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 34

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 11,195

29. Deepest well drilled to January 1, 1982 (feet) ....*Dry Hole* 17,349

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	10	6.5
Gas Wells	7	4.6
Dry Wells	136	88.9
Service Wells	0	0
Total Wells	153	100.0
Average Depth per well	6,013	
Total Footage	919,958	
Development Wells		
Oil Wells	338	46.0
Gas Wells	146	19.9
Dry Wells	238	32.4
Service Wells	12	1.7
Total Wells	734	100.0
Average Depth per well	4,668	
Total Footage	3,426,432	
Total Wells		
Oil Wells	348	39.2
Gas Wells	153	17.2
Dry Wells	374	42.2
Service Wells	12	1.4
Total Wells	887	100.0
Average Depth per well	4,900	
Total Footage	4,346,390	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	16,284	54.8
Gas	2,414	8.1
Dry	11,029	37.1
Total	29,727	100.0

THE NEW OXYGEN MENACE DOWNHOLE.

Today's reservoirs can kill yesterday's corrosion inhibitors. You need new answers, and Tretolite has them for you.

It only takes a tiny amount of oxygen in production fluids to start big problems for you—only 50 parts of oxygen in a *billion!*

Suddenly, well equipment that you've guarded effectively for years against corrosion can start getting eaten alive.

The trouble's growing in today's depleting reservoirs. Lowered fluid levels and decreased gas pressure can let small air leaks begin in the annulus. Conventional inhibitors become ineffective.

But you don't have to read every line of the case histories at right to see how well KONTOL* Low-Oxygen Corrosion Inhibitors work—with Tretolite's field force of technical specialists to help you develop the treatment programs that make control effective.

Water-soluble and oil-soluble KONTOL Low-Oxygen Corrosion Inhibitors are organic, film-forming compounds designed to control corrosion in systems containing hydrogen sulfide and/or carbon dioxide with 3 ppm or less of dissolved oxygen.

A Tretolite program with KONTOL is ideal, especially where it's just not possible or practical to remove or prevent dissolved oxygen. Water-soluble KONTOL is effective, too, in the absence of oxygen, has good surfactant properties, and is usable in most oil field brines. It can be applied continuously by squeeze, or frequent batch. Various oil-soluble KONTOL formulas also provide a number of other specialized benefits in specific applications.

Get all the advantages of Tretolite's 60-plus years of leadership in oil field treatment products. Ask the Man in the Red Car.

Look how well new KONTOL Low-Oxygen Corrosion Inhibitors—teamed with Tretolite-supervised treatment programs—are working to control oxygen-accelerated corrosion problems in every kind of oilfield situation.

System	Evaluation Method	Before	After
Power Water	Pot'dyne Pit Rate Tubing Failures	640 MPY 4/mo.	18 MPY 0.2/mo.
CO₂ Flood Rod Pumps	Rod Breaks	4.25/mo.	1.5/mo.
Waterflood	Line Leaks	10/mo.	0.8/mo.
Fireflood Flowing Wells	Coupons	200 MPY	7 MPY
Rod-pumped Wells	Body Breaks	4/mo.	1/mo.
Waterflood	Pot'dyne Pit Rate at Injection Well	160 MPY	14 MPY
Waterflood	Pot'dyne Pit Rate at Injection Well	34 MPY	16 MPY
Rod-pumped Wells	Coupons	21 MPY	3 MPY
Hot, Sweet Flowing Wells	Coupons	5 MPY	0.4 MPY
Submersible Pumped Hot Oil Well	Life of New Tubing	2 mos.	1 yr. +
Rod-pumped Oil Well	Pump Failures	2/mo.	< 1/yr.
3 Rod-pumped Wells	Corrosion Pulls per Well Pot'dyne Pit Rate	1/mo. 23 MPY	1/yr. 7 MPY
Rod-pumped Oil Well	Corrosion Pulls	1/mo.	< 1/3 mo.
Rod-pumped Wells	Avg. Iron Counts	68 ppm	13 ppm
Rod-pumped Oil Wells	Pot'dyne Pit Rate	630 MPY	23 MPY
Rod-pumped Oil Well	Corrosion Pulls Rod Life Pot'dyne Pit Rate	17/yr. 3-5 mo. 300 MPY	0/yr. 11+ mo. 14 MPY
Submersible Oil Well	Corrosion Failures Pot'dyne Pit Rate	2/yr. 35 MPY	0/yr. 7 MPY

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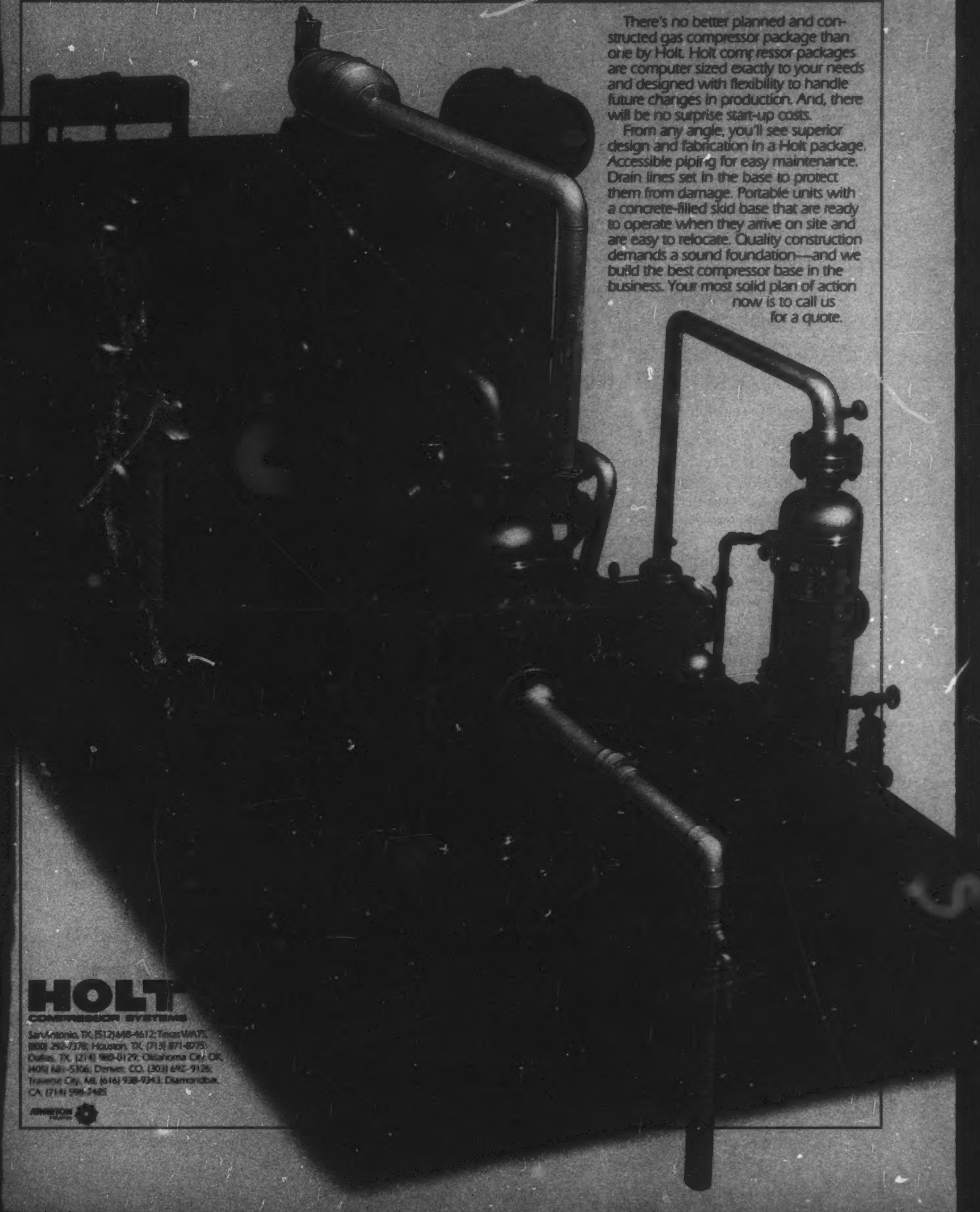
Holt plans ahead to cover all the angles.



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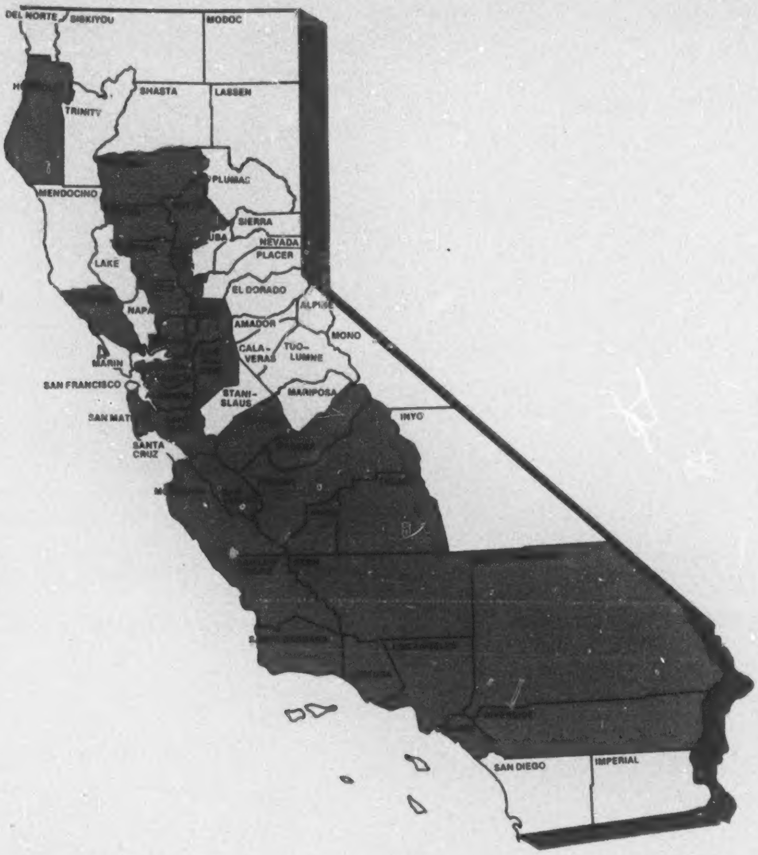
The Oil Producing Industry in CALIFORNIA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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	58
2.	Number of Counties with oil and/or gas production	30
3.	Total land area of State (acres)	100,071,040
4.	Area proved productive of oil and/or gas (acres)	455,461
5.	Estimated non-productive area leased January 1, 1982 (acres)	4,600,000
6.	Percent of total land area productive or leased	5.1
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 62,641,931
8.	Average field price of crude oil per barrel in 1981	$ 26.72
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 10,285,570
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 1,196,960
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 11,482,530
12.	Percent petroleum value to total all minerals	82.2%

13. Principal mineral products in order of value:
    - 1st .... Crude Petroleum
    - 2nd .... Portland Cement
    - 3rd .... Natural Gas

14.	Number of employees engaged in crude oil and natural gas production		37,969
15.	First year of production of crude oil		1861
	natural gas		1889
16.	First recorded production of crude oil (barrels)	1876	12,000
	natural gas (Mcf)	1906	153,000
17.	Geophysical Activity—Crew months worked in 1981		192

Production & Reserves

18.	Year of largest production (crude oil)	1981
19.	Crude oil produced in year of largest production (barrels)	384,958,000
20.	Percent of crude oil produced by stripper wells	12.4%

21.	Number of producing wells at end of 1981: Crude Oil	47,362
	Gas & Gas Distillate	1,154
	Total	48,516
22.	Average daily production of crude oil per well at end of 1981	19.7
23.	Percent of wells pumping or on artificial lift	96.6%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	951,181	21,6[illegible]3*	972,844
1979	965,118	23,0[illegible]4	988,132
1980	975,199	19,500	994,699
1981	1,054,628	19,000*	1,073,628

*Estimated

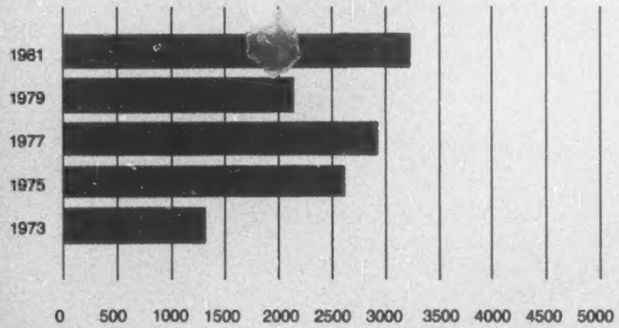
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	565	17	582	693
Estimated Production	360	8	368	306
Net Change in Reserves	205	9	214	387

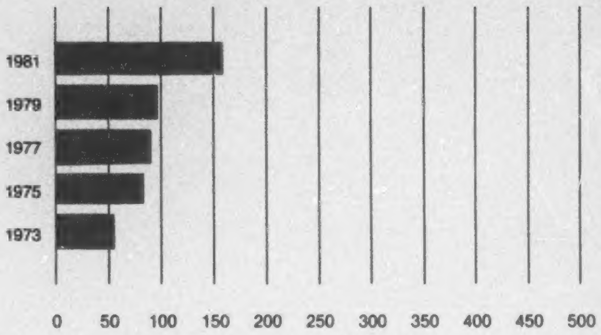
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	24,261	1,264	25,525	34,394
Total Production	18,791	1,144	19,935	28,843
Proved Reserves Dec. 31, 1980	5,470	120	5,590	5,551

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)	155
28.	Deepest producing well drilled to January 1, 1982 . . . . *Oil*	18,060
29.	Deepest well drilled to January 1, 1982 (feet) . . . . *Dry Hole*	22,711

30. Wells and footage drilled in 1981:

	Number	Percent
Wildcat Wells		
Oil Wells	103	20.9
Gas Wells	58	11.8
Dry Wells	331	67.3
Service Wells	0	0
Total Wells	492	100.0
Average Depth per well	5,608	
Total Footage	2,759,225	
Development Wells		
Oil Wells	2,078	76.1
Gas Wells	34	1.2
Dry Wells	84	3.1
Service Wells	536	19.6
Total Wells	2,732	100.0
Average Depth per well	2,082	
Total Footage	2,688,126	
Total Wells		
Oil Wells	2,181	67.6
Gas Wells	92	2.9
Dry Wells	415	12.9
Service Wells	536	16.6
Total Wells	3,224	100.0
Average Depth per well	2,620	
Total Footage	8,447,351	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	Percent
Oil	95,631	77.4
Gas	2,825	2.3
Dry	25,164	20.3
Total	123,620	100.0

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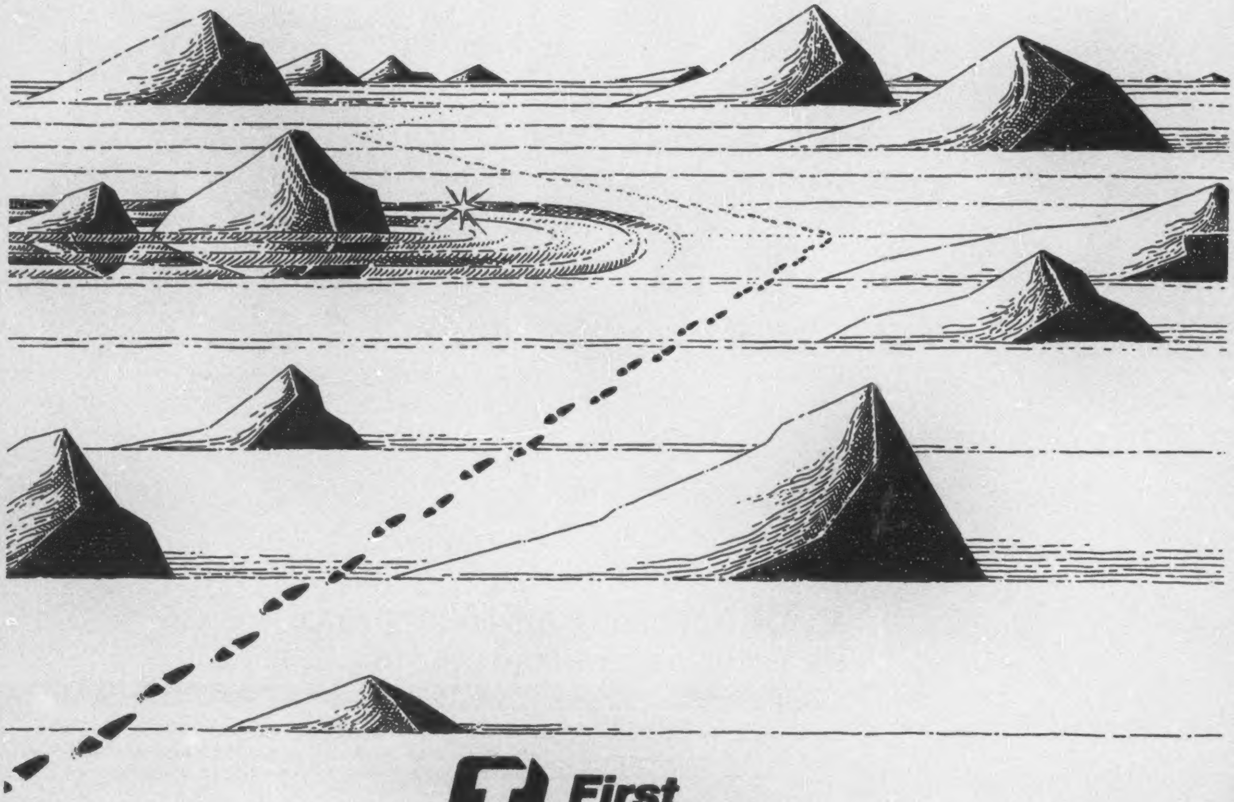

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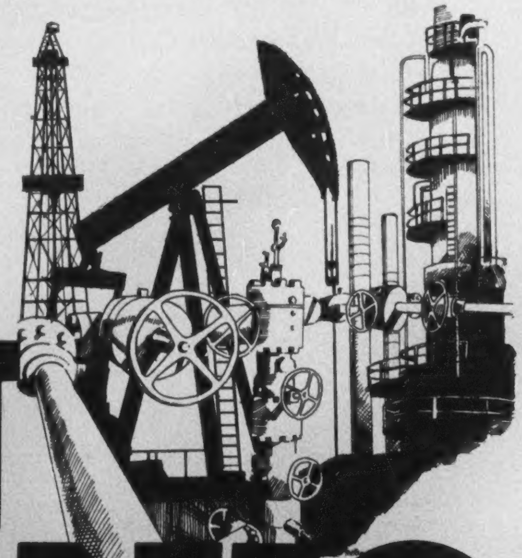

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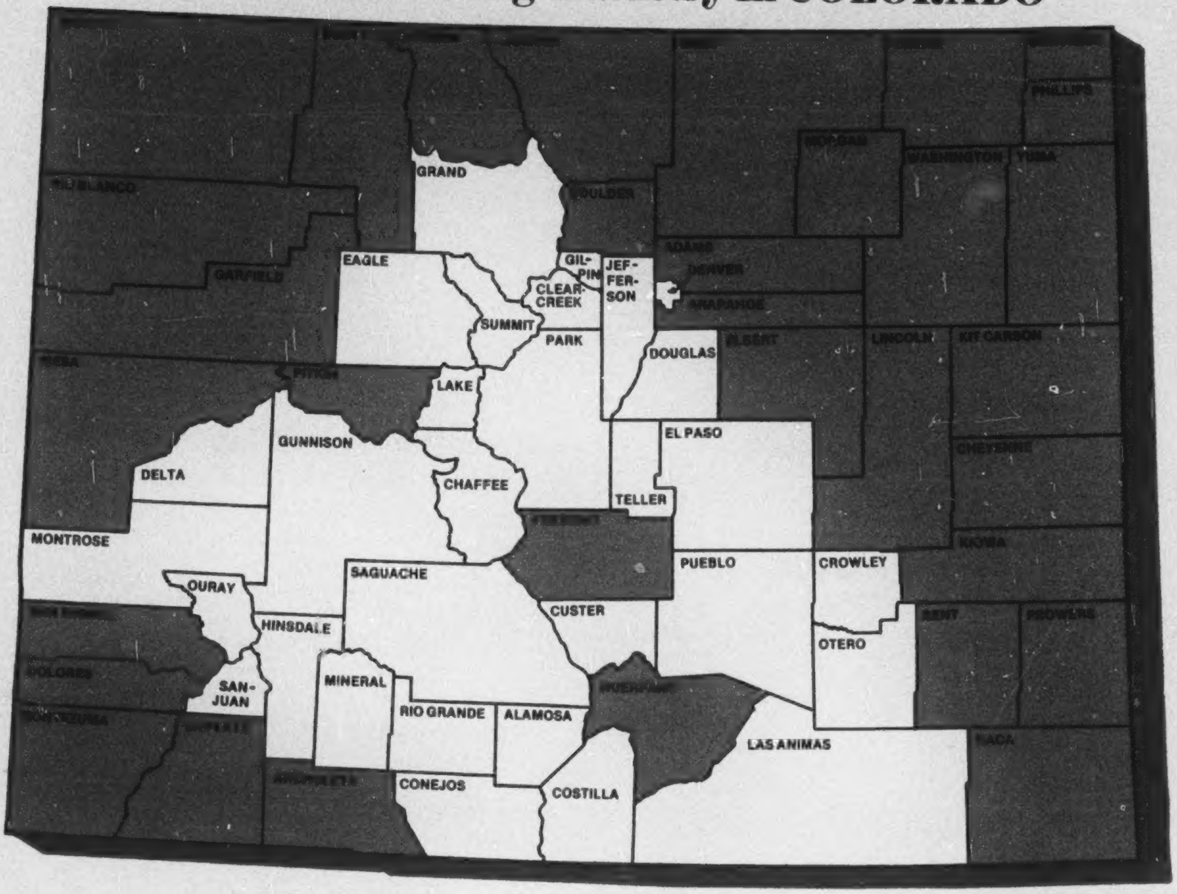
The Oil Producing Industry in COLORADO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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	63
2.	Number of Counties with oil and/or gas production	33
3.	Total land area of State (acres)	66,410,240
4.	Area proved productive of oil and/or gas (acres)	1,209,000
5.'	Estimated non-productive area leased January 1, 1982 (acres)	29,430,000
6.	Percent of total land area productive or leased	46.1
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 6,826,224
8.	Average field price of crude oil per barrel in 1981	$ 35.93
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 1,088,787
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 321,570
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 1,410,357
12.	Percent petroleum value to total all minerals	37.8%
13.	Principal mineral products in order of value:	
	1st .... Molybdenum	
	2nd .... Crude Petroleum	
	3rd .... Coal	
14.	Number of employees engaged in crude oil and natural gas production	25,104
15.	First year of production of crude oil	1862
	natural gas	1893
16.	First recorded production of crude oil (barrels) 1862	50
	natural gas (Mcf) 1906	23
17.	Geophysical Activity—Crew months worked in 1981	56

Production & Reserves

18.	Year of largest production (crude oil)	1956
19.	Crude oil produced in year of largest production (barrels)	58,156,000
20.	Percent of crude oil produced by stripper wells	6.6%

21. Number of producing wells at end of 1981:

Crude Oil	2,898
Gas & Gas Distillate	3,988
Total	6,886

22. Average daily production of crude oil per well at end of 1981 .... 28.5

23. Percent of wells pumping or on artificial lift 94.8%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	100,814	24,477	125,291
1979	88,559	25,205*	113,764
1980	81,426	26,000*	117,426
1981	83,022	29,000*	112,022

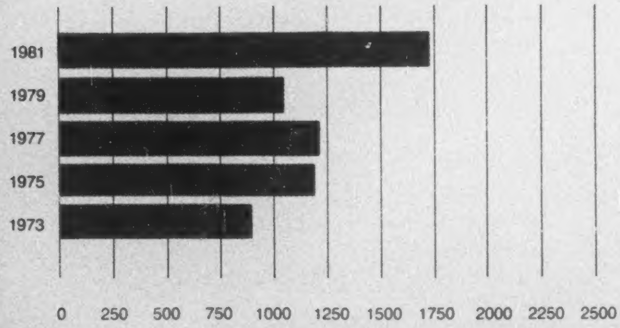
*Estimated

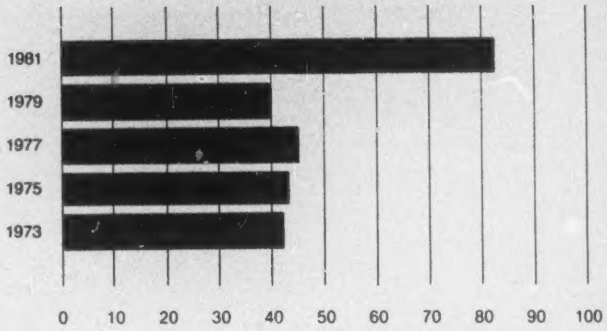
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft)
New Reserves Found	56	28	84	510
Estimated Production	32	11	43	178
Net Change in Reserves	24	17	41	332

26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft)
Total Reserves Found	1,474	312	1,786	6,682
Total Production	1,291	118	1,409	3,512
Proved Reserves Dec. 31, 1980	183	194	377	3,170


TOTAL WELLS DRILLED


ROTARY RIGS ACTIVE

Exploration & Development

27. Rotary Drilling Rigs Active in 1980 (average) 82

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 17,632

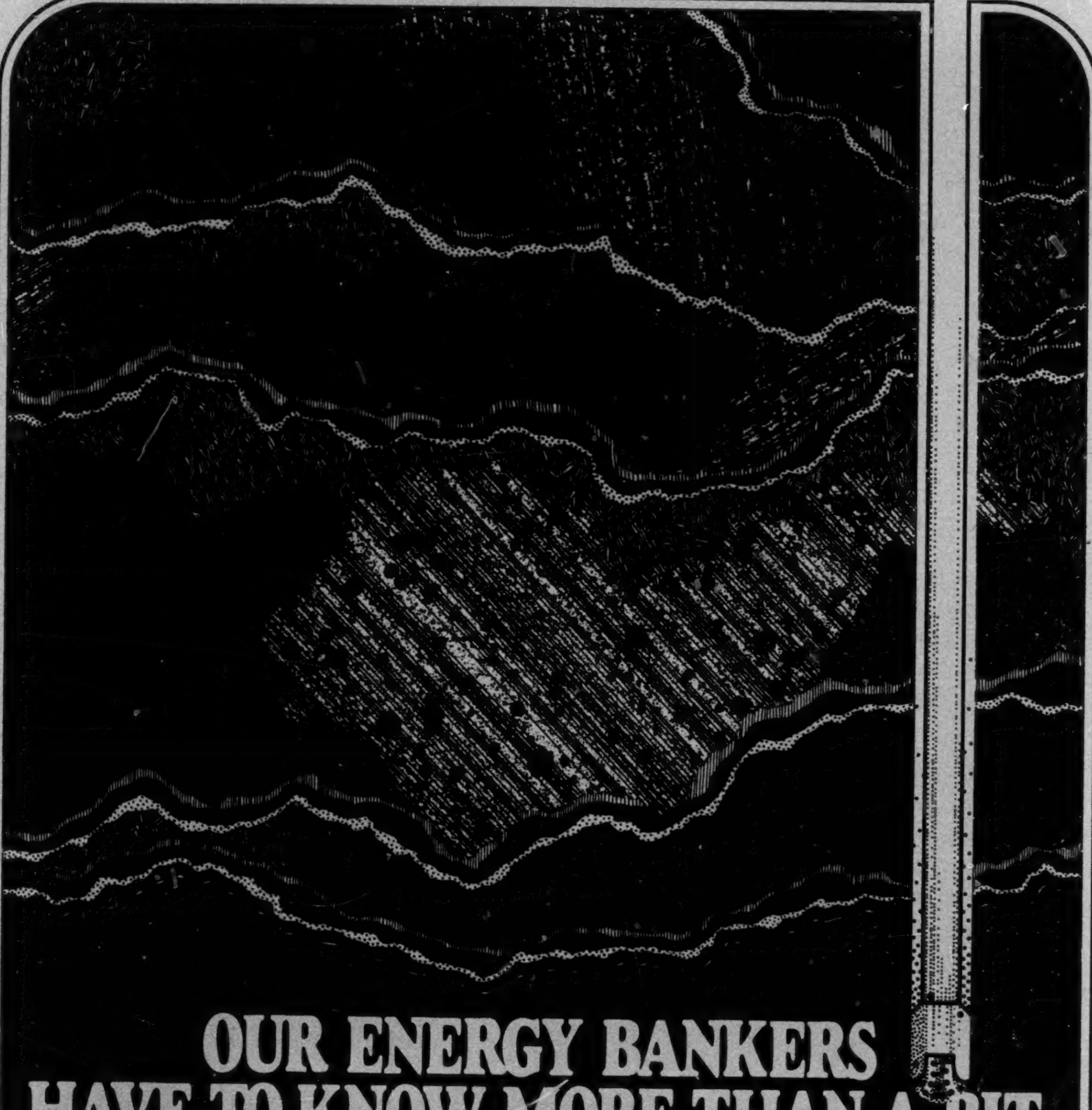
29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 19,710

30. Wells and footage drilled in 1981:

	Number	Percent
Wildcat Wells		
Oil Wells	132	17.9
Gas Wells	112	15.2
Dry Wells	493	66.9
Service Wells	0	0
Total Wells	737	100.0
Average Depth per well	5,704	
Total Footage	4,204,106	
Development Wells		
Oil Wells	321	33.1
Gas Wells	471	48.6
Dry Wells	172	17.7
Service Wells	6	0.6
Total Wells	970	100.0
Average Depth per well	5,508	
Total Footage	5,342,841	
Total Wells		
Oil Wells	453	26.5
Gas Wells	583	34.2
Dry Wells	665	39.0
Service Wells	6	0.3
Total Wells	1,707	100.0
Average Depth per well	5,593	
Total Footage	9,546,947	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	Percent
Oil	8,149	26.8
Gas	4,687	15.4
Dry	17,544	57.8
Total	30,380	100.0



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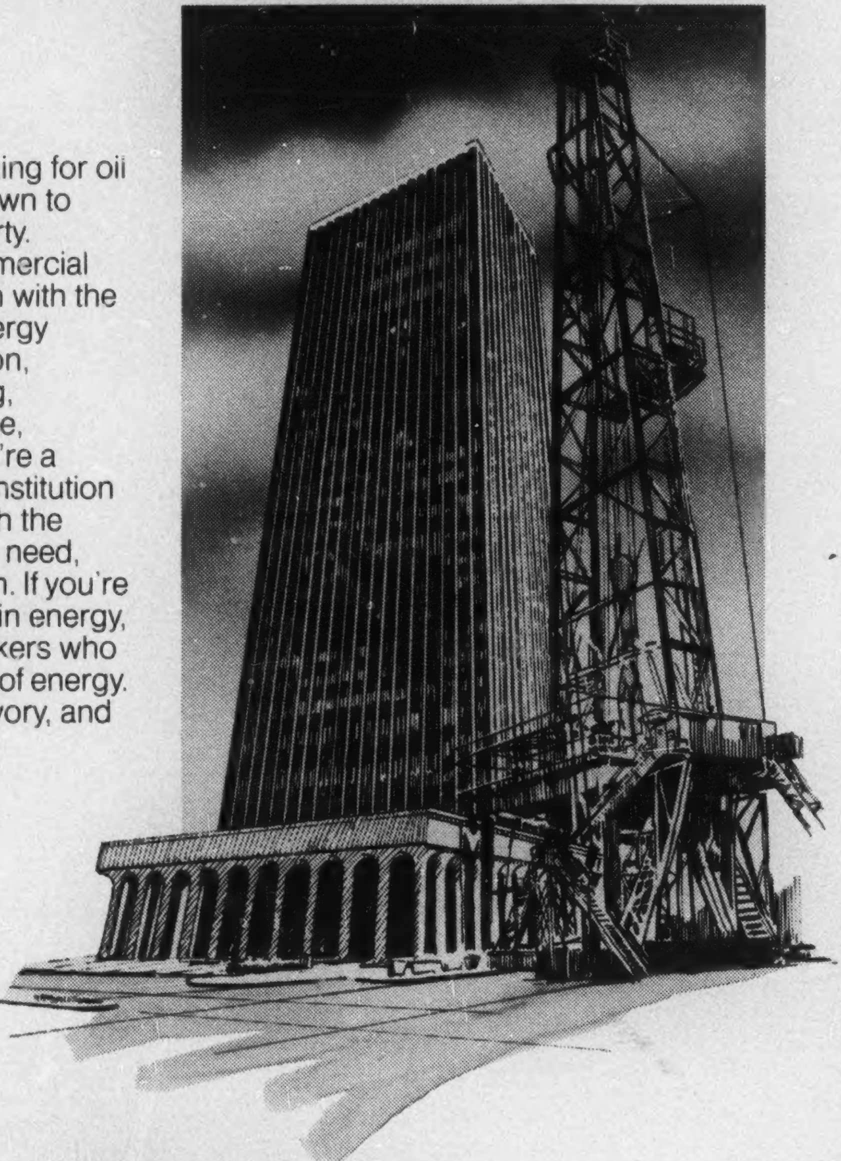

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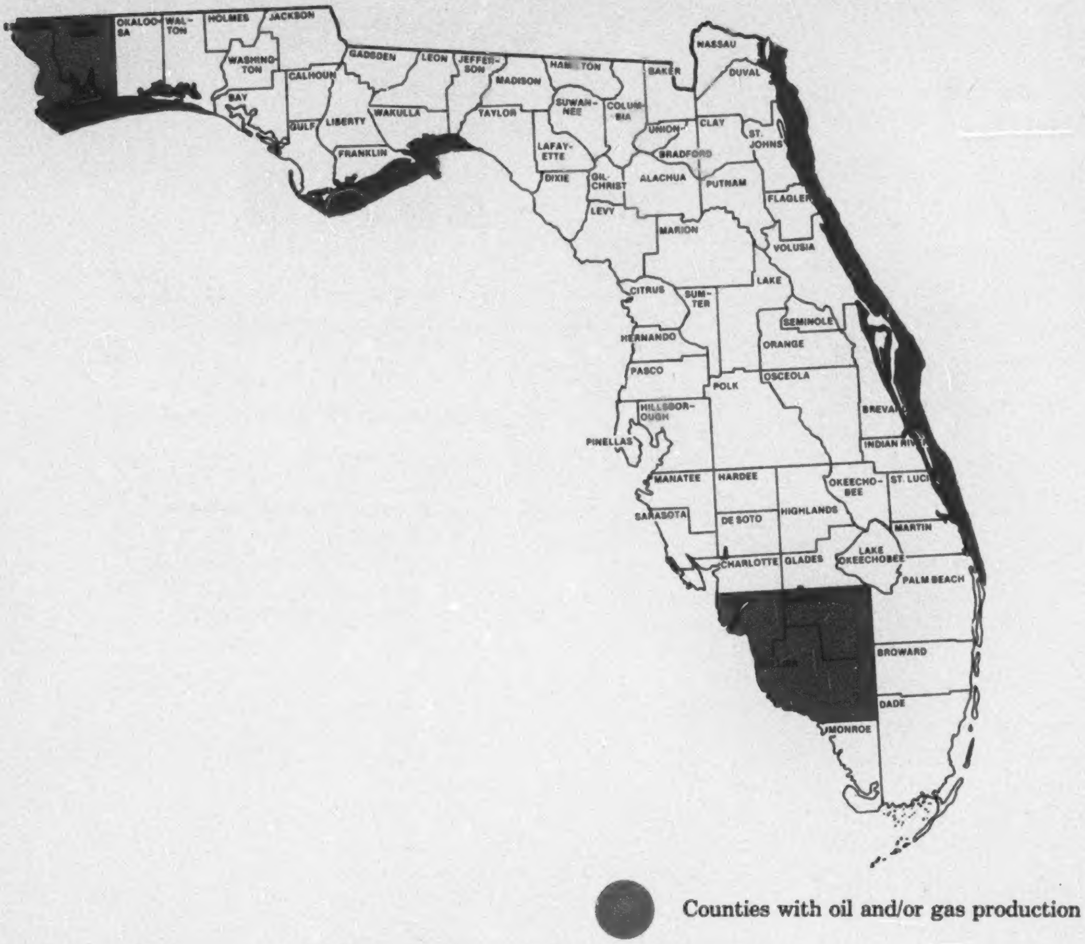
The Oil Producing Industry in FLORIDA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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		67
2.	Number of Counties with oil and/or gas production		5
3.	Total land area of State (acres)		34,617,600
4.	Area proved productive of oil and/or gas (acres)		35,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		3,680,000
6.	Percent of total land area productive or leased		10.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	5,443,239
8.	Average field price of crude oil per barrel in 1981	$	35.26
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	1,226,095
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	63,630
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	1,289,725
12.	Percent petroleum value to total all minerals		39.3%

13.	Principal mineral products in order of value:		
	1st .... Crude Petroleum		
	2nd .... Crushed Stone		
	3rd .... Portland Cement		
14.	Number of employees engaged in crude oil and natural gas production		696
15.	First year of production of crude oil		1943
	natural gas		1943
16.	First recorded production of crude oil (barrels)	1943	4,000
	natural gas (Mcf)	1949	10,000
17.	Geophysical Activity—Crew months worked in 1981		42

Production & Reserves

18.	Year of largest production (crude oil)	1978
19.	Crude oil produced in year of largest production (barrels)	47,536,000
20.	Percent of crude oil produced by stripper wells	Not Available

21. Number of producing wells at end of 1981:

Crude Oil	117
Gas & Gas Distillate	0
Total	117

22. Average daily production of crude oil per well at end of 1981 .... 905.1

23. Percent of wells pumping or on artificial lift 64.1%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	130,236	22,438*	152,674
1979	129,227	30,137*	159,364
1980	117,175	29,000*	146,175
1981	95,268	27,400*	122,668

*Estimated

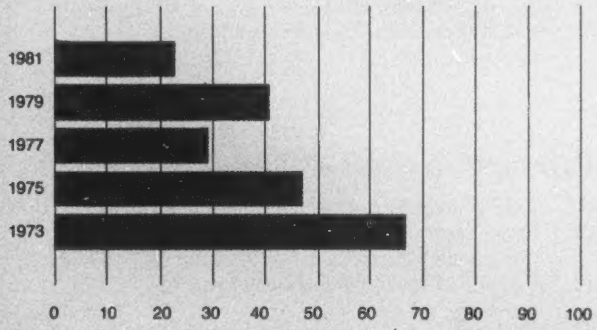
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	48	16	64	60
Estimated Production	42	10	52	46
Net Change in Reserves	6	6	12	14

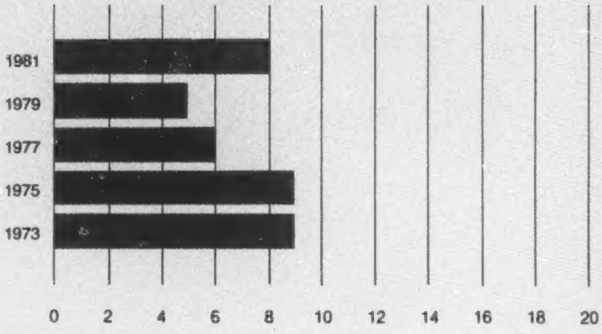
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	588	74	662	479
Total Production	454	47	501	357
Proved Reserves Dec. 31, 1980	134	27	161	122

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 8

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 16,130

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 18,670

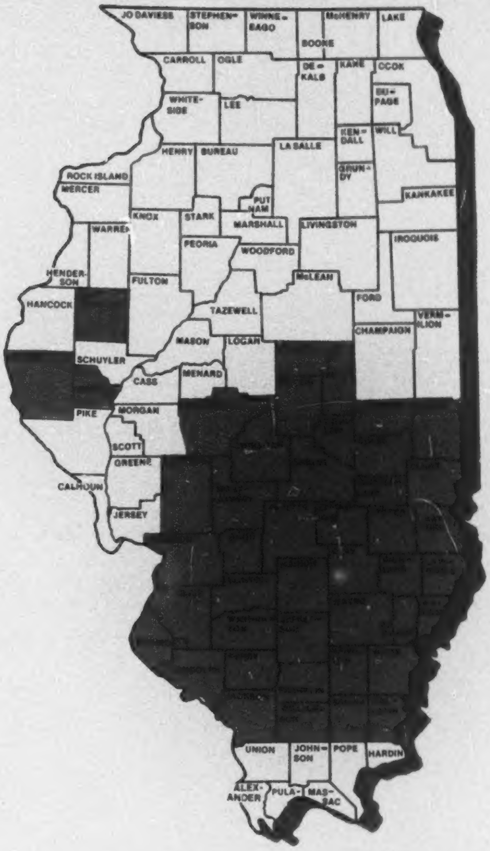
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	9	100.0
Service Wells	0	0
Total Wells	9	100.0
Average Depth per well	12,093	
Total Footage	108,838	
Development Wells		
Oil Wells	7	50.0
Gas Wells	0	0
Dry Wells	5	35.7
Service Wells	2	14.3
Total Wells	14	100.0
Average Depth per well	12,828	
Total Footage	179,591	
Total Wells		
Oil Wells	7	30.4
Gas Wells	0	0
Dry Wells	14	60.9
Service Wells	2	8.7
Total Wells	23	100.0
Average Depth per well	12,540	
Total Footage	288,429	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	238	27.5
Gas	2	0.2
Dry	626	72.3
Total	866	100.0

The Oil Producing Industry in ILLINOIS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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	102
2.	Number of Counties with oil and/or gas production	43
3.	Total land area of State (acres)	35,678,720
4.	Area proved productive of oil and/or gas (acres)	673,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	4,000,000
6.	Percent of total land area productive or leased	13.1
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 10,237,581
8.	Average field price of crude oil per barrel in 1981	$ 36.33
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 933,681
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 5,500
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 939,181
12.	Percent petroleum value to total all minerals	29.6%

13.	Principal mineral products in order of value: 1st Coal 2nd Crude Petroleum 3rd Crushed Stone	
14.	Number of employees engaged in crude oil and natural gas production	7,300
15.	First year of production of crude oil	1889
	natural gas	1882
16.	First recorded production of crude oil (barrels) 1890	1,460
	natural gas (Mcf) 1906	410,000
17.	Geophysical Activity—Crew months worked in 1981	9

Production & Reserves

18.	Year of largest production (crude oil)	1940
19.	Crude oil produced in year of largest production (barrels)	147,647,000
20.	Percent of crude oil produced by stripper wells	88.8%

21. Number of producing wells at end of 1981: Crude Oil 26,100
Gas & Gas Distillate 70
Total 26,170

22. Average daily production of crude oil per well at end of 1981............. 2.5

23. Percent of wells pumping or on artificial lift 100.0%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	64,005	23,020*	89,119
1979	59,707	24,384	84,091
1980	62,027	24,500*	86,527
1981	70,411	24,000*	94,411

*Estimated

25. Production and new reserves found in 1980:

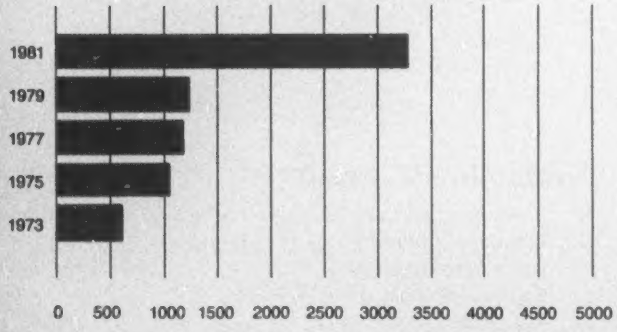
	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft)
New Reserves Found	-7**	N.A.	-7**	N.A.
Estimated Production	16	N.A.	16	N.A.
Net Change in Reserves	-23	N.A.	-23	N.A.

**Downward Revision of Previous Estimate

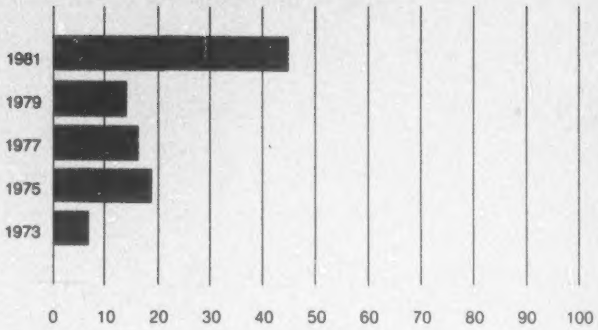
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft)
Total Reserves Found	3,239	N.A.	3,239	N.A.
Total Production	3,126	N.A.	3,126	N.A.
Proved Reserves Dec. 31, 1980	113	N.A.	113	N.A.

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 45

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 5,405

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 14,942

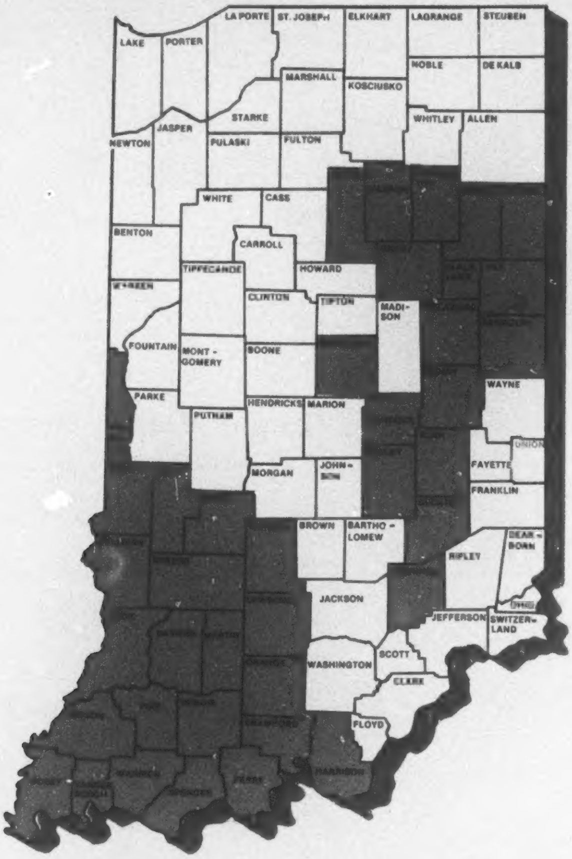
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	136	20.5
Gas Wells	2	0.3
Dry Wells	525	79.2
Service Wells	0	0
Total Wells	663	100.0
Average Depth per well	2,968	
Total Footage	1,967,951	
Development Wells		
Oil Wells	1,681	64.2
Gas Wells	16	0.6
Dry Wells	780	29.8
Service Wells	142	5.4
Total Wells	2,619	100.0
Average Depth per well	2,611	
Total Footage	6,837,629	
Total Wells		
Oil Wells	1,817	55.4
Gas Wells	18	0.5
Dry Wells	1,305	39.8
Service Wells	142	4.3
Total Wells	3,282	100.0
Average Depth per well	2,683	
Total Footage	8,805,580	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	71,427	61.2
Gas	1,405	1.2
Dry	43,927	37.6
Total	116,759	100.0

The Oil Producing Industry in INDIANA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HARRISON

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		92
2.	Number of Counties with oil and/or gas production		39
3.	Total land area of State (acres)		23,102,080
4.	Area proved productive of oil and/or gas (acres)		7,832,960
5.	Estimated non-productive area leased January 1, 1982 (acres)		1,000,000
6.	Percent of total land area productive or leased		382
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	1,661,091
8.	Average field price of crude oil per barrel in 1981	$	36.39
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	171,797
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	420
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	172,217
12.	Percent petroleum value to total all minerals		15.3%

13.	Principal mineral products in order of value:		
	1st	Coal	
	2nd	Crude Petroleum	
	3rd	Crushed Stone	
14.	Number of employees engaged in crude oil and natural gas production		922
15.	First year of production of crude oil		1889
	natural gas		1885
16.	First recorded production of crude oil (barrels)	1889	23,000
	natural gas (Mcf)	1906	7,861
17.	Geophysical Activity—Crew months worked in 1981		None Reported

Production & Reserves

18.	Year of largest production (crude oil)	1953
19.	Crude oil produced in year of largest production (barrels)	12,823,000
20.	Percent of crude oil produced by stripper wells	80.7%

21. Number of producing wells at end of 1981:

Crude Oil	5,715
Gas & Gas Distillate	698
Total	6,413

22. Average daily production of crude oil per well at end of 1981 .... 2.3

23. Percent of wells pumping or on artificial lift 100.0%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	12,847	0	12,847
1979	12,918	0	12,918
1980	13,601	200	13,801
1981	12,934	200*	13,134

*Estimated

25. Production and new reserves found in 1980:

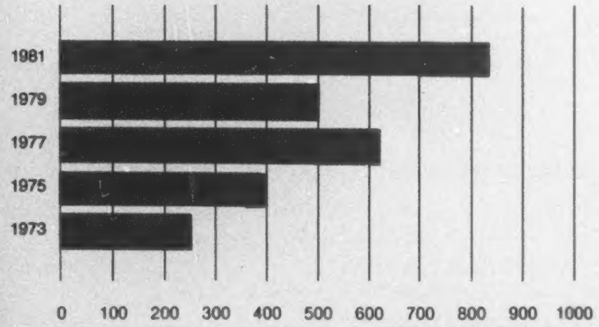
	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft.)
New Reserves Found	-13**	N.A.	-13**	N.A.
Estimated Production	4	N.A.	4	N.A.
Net Change in Reserves	-17	N.A.	-17	N.A.

**Downward Revision of Previous Estimate

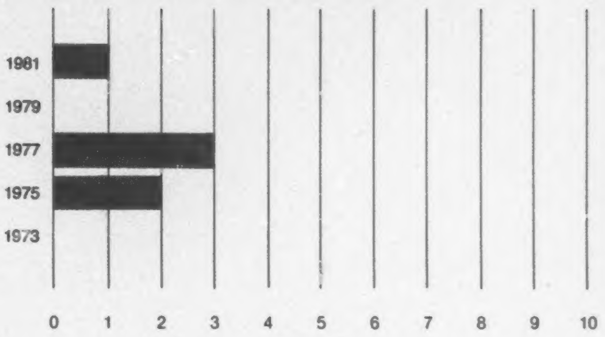
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft.)
Total Reserves Found	495	N.A.	495	N.A.
Total Production	472	N.A.	472	N.A.
Proved Reserves Dec. 31, 1980	23	N.A.	23	N.A.

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 1

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 4,508

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 7,980

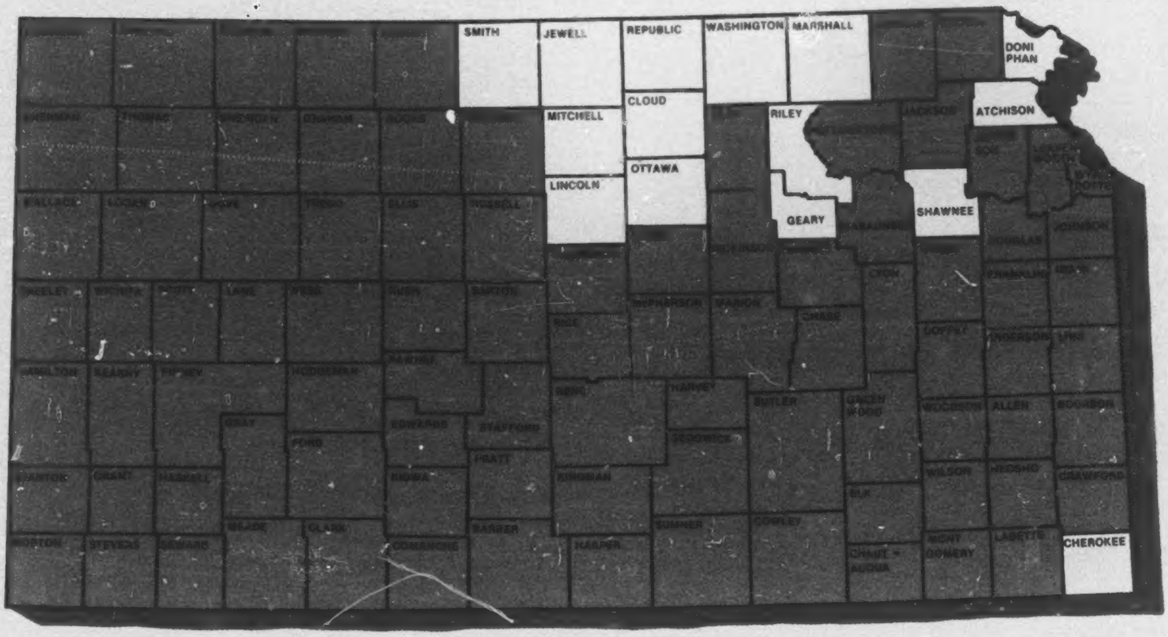
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	64	18.4
Gas Wells	6	1.7
Dry Wells	278	79.9
Service Wells	0	0
Total Wells	348	100.0
Average Depth per well	2,003	
Total Footage	697,112	
Development Wells		
Oil Wells	297	61.5
Gas Wells	25	5.2
Dry Wells	139	28.8
Service Wells	22	4.5
Total Wells	483	100.0
Average Depth per well	1,778	
Total Footage	858,922	
Total Wells		
Oil Wells	361	43.4
Gas Wells	31	3.8
Dry Wells	417	50.2
Service Wells	22	2.6
Total Wells	831	100.0
Average Depth per well	1,872	
Total Footage	1,556,034	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	36,385	59.7
Gas	2,051	3.4
Dry	22,519	36.9
Total	60,955	100.0

The Oil Producing Industry in KANSAS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CHAUTAUQUA
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LABETTE
CHEROKEE

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	105
2.	Number of Counties with oil and/or gas production	90
3.	Total land area of State (acres)	52,343,680
4.	Area proved productive of oil and/or gas (acres)	3,882,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	9,912,900
6.	Percent of total land area productive or leased	26.4
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 18,802,668
8.	Average field price of crude oil per barrel in 1981	$ 36.02
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 2,370,476
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 720,125
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 3,090,601
12.	Percent petroleum value to total all minerals	91.1%
13.	Principal mineral products in order of value:	
	1st .... Crude Petroleum	
	2nd .... Natural Gas	
	3rd .... Portland Cement	
14.	Number of employees engaged in crude oil and natural gas production	17,307
15.	First year of production of crude oil	1889
	natural gas	1882
16.	First recorded production of crude oil (barrels) 1889	500
	natural gas (Mcf) 1906	69,323
17.	Geophysical Activity—Crew months worked in 1981	65

Production & Reserves

18.	Year of largest production (crude oil)	1956
19.	Crude oil produced in year of largest production (barrels)	124,204,000
20.	Percent of crude oil produced by stripper wells	74.1%

21. Number of producing wells at end of 1981:

Crude Oil	42,402
Gas & Gas Distillate	11,014
Total	53,416

22. Average daily production of crude oil per well at end of 1981 .... 4.1

23. Percent of wells pumping or on artificial lift 99.9%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	155,030	88,493	243,523
1979	157,011	87,397*	244,408
1980	164,347	78,500*	242,847
1981	180,301	76,500*	256,801

*Estimated

25. Production and new reserves found in 1980:

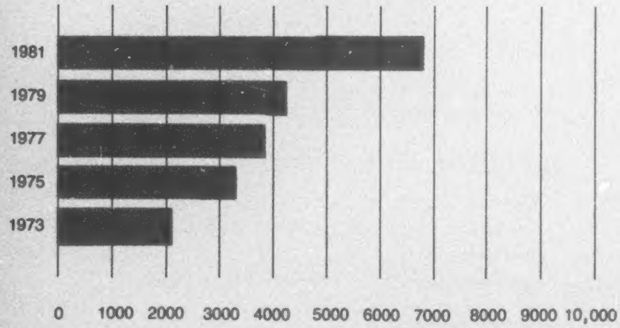
	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	-13**	13	0	-85**
Estimated Production	54	26	80	674
Net Change in Reserves	-67	-13	-80	-759

**Downward Revision of Previous Estimate

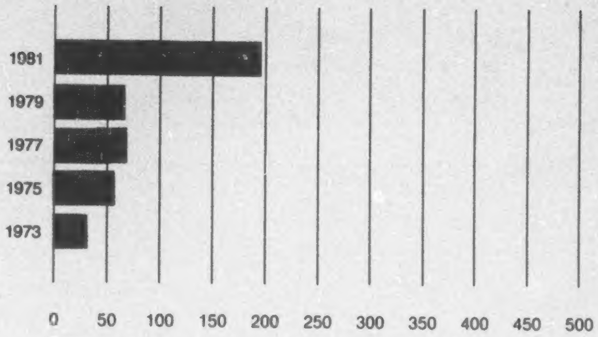
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	5,258	1,031	6,289	36,552
Total Production	4,948	642	5,590	26,487
Proved Reserves Dec. 31, 1980	310	389	699	10,065

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 197

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 6,774

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 8,713

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	232	15.5
Gas Wells	83	5.6
Dry Wells	1,177	78.9
Service Wells	0	0
Total Wells	1,492	100.0
Average Depth per well	4,064	
Total Footage	6,063,378	
Development Wells		
Oil Wells	2,858	53.2
Gas Wells	533	9.9
Dry Wells	1,860	34.6
Service Wells	122	2.3
Total Wells	5,373	100.0
Average Depth per well		
Total Footage	17,517,712	
Total Wells		
Oil Wells	3,090	45.0
Gas Wells	616	9.0
Dry Wells	3,037	44.2
Service Wells	122	1.8
Total Wells	6,865	100.0
Average Depth per well	3,435	
Total Footage	23,581,090	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	104,962	51.8
Gas	19,925	9.8
Dry	77,689	38.4
Total	202,576	100.0

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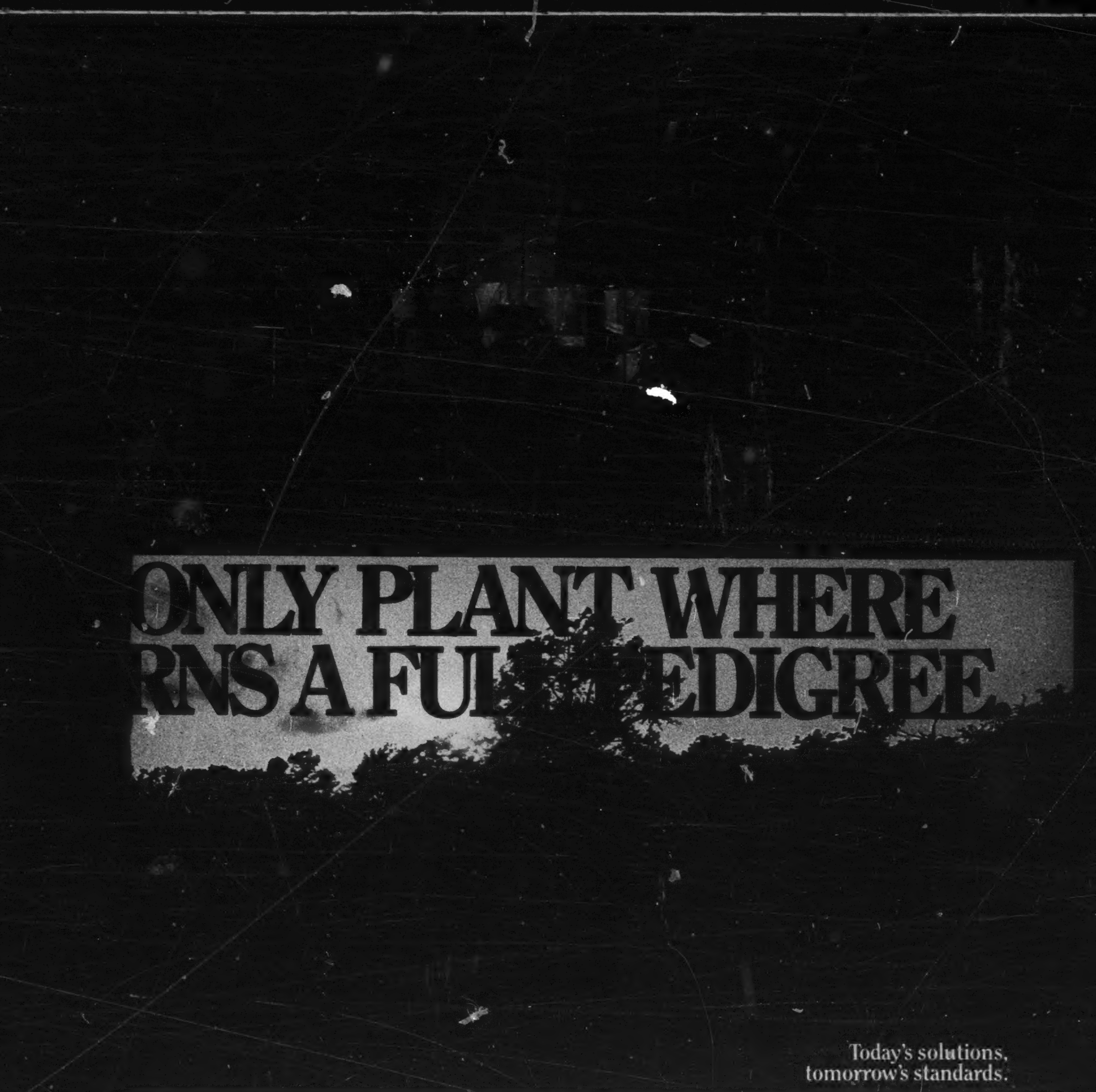
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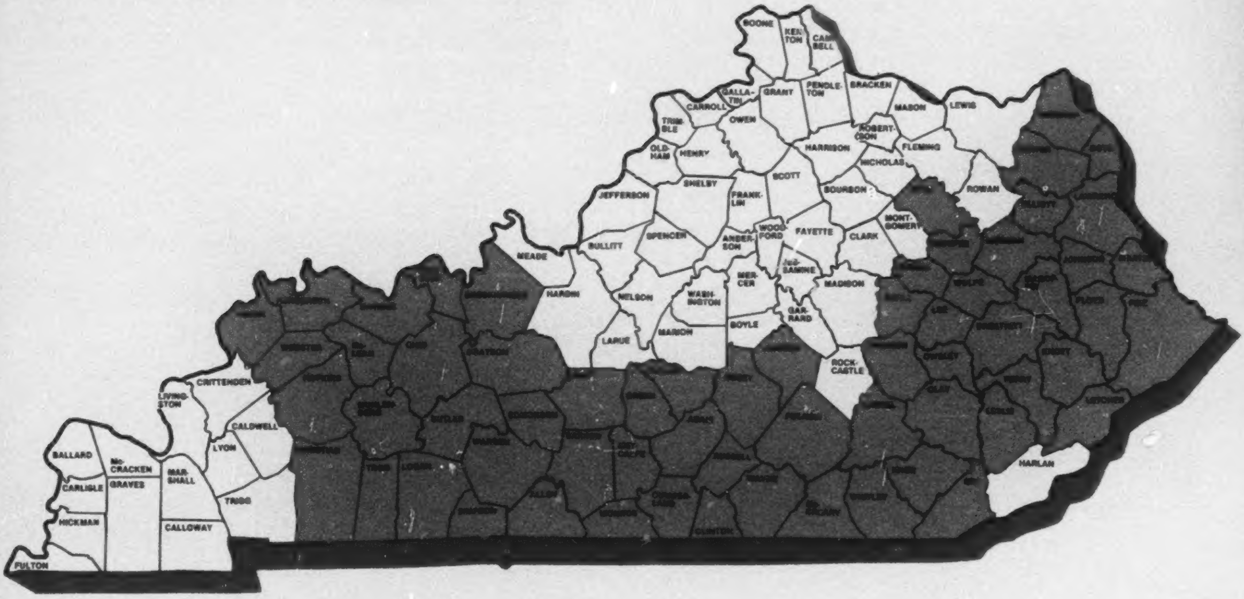
The Oil Producing Industry in KENTUCKY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HARLAN

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	120
2.	Number of Counties with oil and/or gas production	63
3.	Total land area of State (acres)	25,376,000
4.	Area proved productive of oil and/or gas (acres)	975,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	4,250,000
6.	Percent of total land area productive or leased	20.6
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 14,823,908
8.	Average field price of crude oil per barrel in 1981	$ 36.16
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 236,776
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 57,200
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 293,976
12.	Percent petroleum value to total all minerals	6.3%
13.	Principal mineral products in order of value:	
	1st ..... Coal	
	2nd ..... Crude Petroleum	
	3rd ..... Natural Gas	
14.	Number of employees engaged in crude oil and natural gas production	3,421
15.	First year of production of crude oil	1860
	natural gas	1888
16.	First recorded production of crude oil (barrels) 1883	5,000
	natural gas (Mcf) 1906	789
17.	Geophysical Activity—Crew months worked in 1981	12

Production & Reserves

18.	Year of largest production (crude oil)	1959
19.	Crude oil produced in year of largest production (barrels)	27,272,000
20.	Percent of crude oil produced by stripper wells	76.9%

21. Number of producing wells at end of
1981: Crude Oil 14,585
Gas & Gas Distillate 8,033
Total 22,618

22. Average daily production of crude oil per well at end of 1981............. 1.2

23. Percent of wells pumping or on artificial lift 100%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	15,682	10,488*	26,130
1979	15,107	12,877*	27,984
1980	16,246	8,900*	25,146
1981	17,940	8,500*	26,440

*Estimated

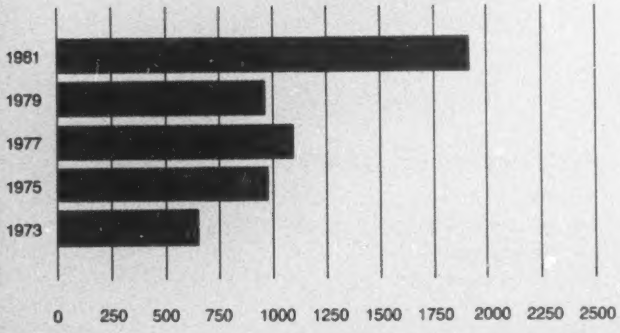
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	17	2	19	95
Estimated Production	7	3	10	63
Net Change in Reserves	10	−1	9	32

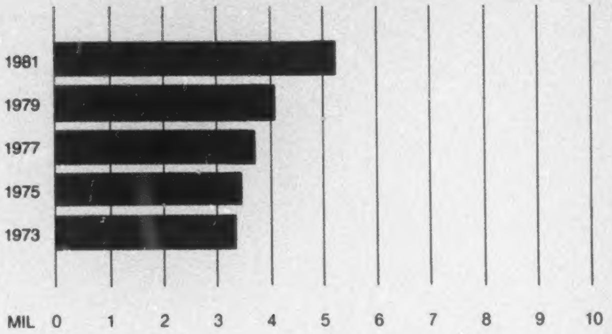
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	693	130	823	4,019
Total Production	658	105	763	3,483
Proved Reserves Dec. 31, 1980	35	25	60	536

TOTAL WELLS DRILLED



ACREAGE UNDER LEASE FOR OIL & GAS



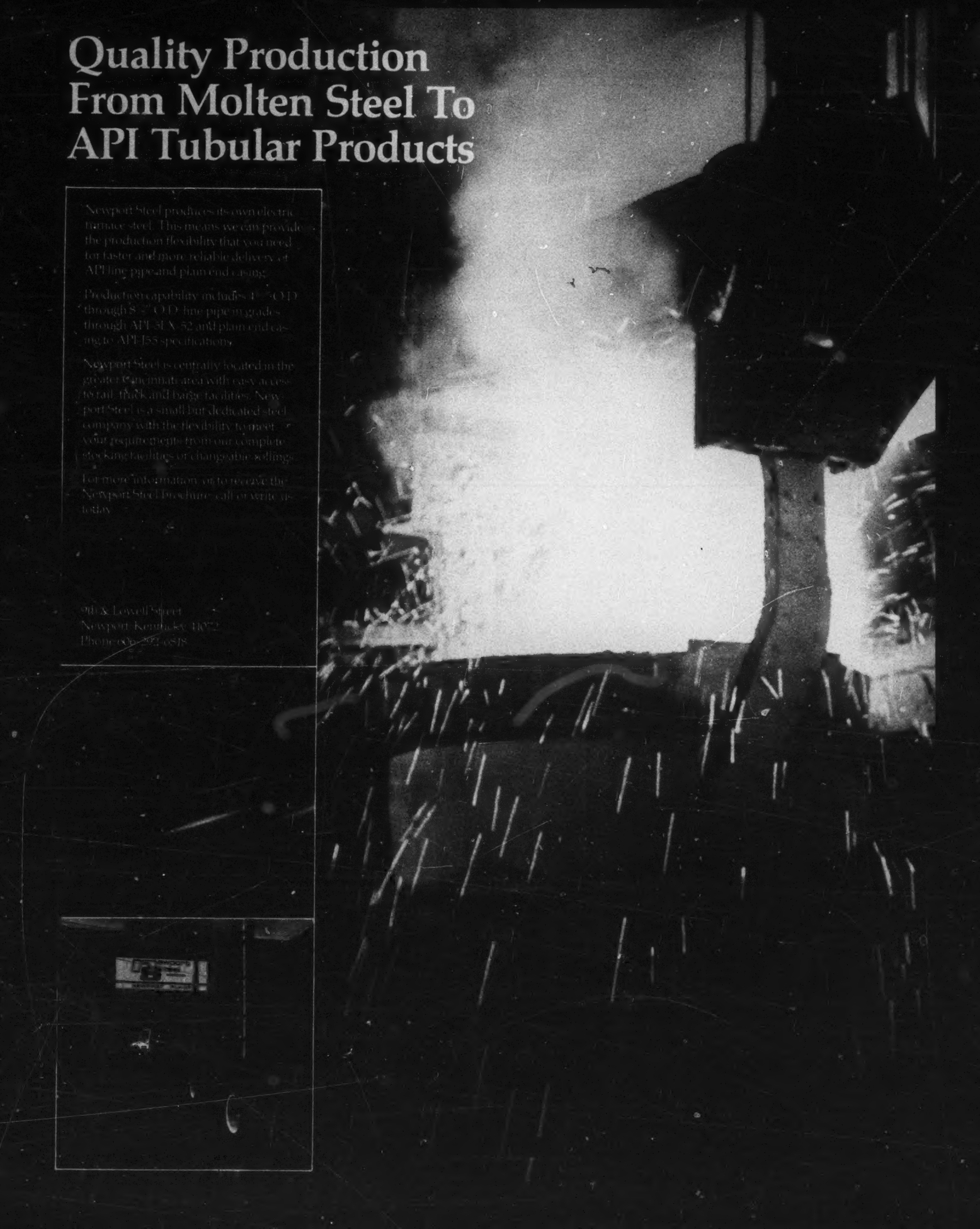
Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 5
28. Deepest producing well drilled to January 1, 1982 .... *Oil* 7,598
29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 15,200
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	95	18.7
Gas Wells	28	5.5
Dry Wells	385	75.8
Service Wells	0	0
Total Wells	508	100.0
Average Depth per well	1,381	
Total Footage	701,755	
Development Wells		
Oil Wells	601	47.2
Gas Wells	135	10.6
Dry Wells	451	35.5
Service Wells	85	6.7
Total Wells	1,272	100.0
Average Depth per well	1,375	
Total Footage	1,749,261	
Total Wells		
Oil Wells	696	39.1
Gas Wells	163	9.2
Dry Wells	863	47.0
Service Wells	85	4.7
Total Wells	1,780	100.0
Average Depth per well	1,377	
Total Footage	2,451,016	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	46,216	52.8
Gas	9,643	11.0
Dry	31,741	36.2
Total	87,600	100.0



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Newport Steel produces its own electric furnace steel. This means we can provide the production flexibility that you need for faster and more reliable delivery of API line pipe and plain end casing.

Production capability includes 4[illegible]" O.D. through 8[illegible]" O.D. line pipe in grades through API 5LX-52 and plain end casing to API J55 specifications.

Newport Steel is centrally located in the greater Cincinnati area with easy access to rail, truck and barge facilities. Newport Steel is a small but dedicated steel company with the flexibility to meet your requirements from our complete stocking facilities or changeable rollings.

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"Investing in your own production equipment can be a merry-go-round… and round… with your capital."

Allan Fullerton
Division Manager
Halliburton Resource Management
Oklahoma City, Oklahoma

"We've seen it happen a lot. A company will invest a small fortune in production equipment, planning for one capacity. Then their production rates change… and they find themselves with their capital tied up in the wrong size equipment, needing more money for the right size and to keep on drilling. It's a vicious circle.

"When we show them how HRM's rental service for production equipment can keep them flexible, so they can change equipment as their production needs change, they kick themselves for not coming to us in the first place. They pay a simple monthly rental fee that keeps their capital flexible, for more drilling or whatever. And, as we've been saying for years, the rental equipment fees go on the books as a *pre-tax* expense item."

There are many ways Halliburton Resource Management can get you off the merry-go-round. We provide an engineering staff well qualified to suggest the right production equipment. Those suggestions are based on both technical needs *and* economic considerations to help make sure you get the most efficiency for your well—initially and when production rates change.

And our customers have found that in addition to freed capital and pre-tax expense advantages, HRM actually *saved* them money over capital equipment ownership costs.

We can normally provide on a monthly rental basis, pumping units, prime movers, separators, treaters, storage equipment, dehydrators, waterflood and disposal equipment, and other major equipment required for your project. It's all available from huge inventories, so we can meet almost any need, almost immediately.

HRM also offers compression equipment and services on a straight rental basis or with a lease/purchase option. And gas processing and conditioning facilities are available on a service-fee basis.

We can show you how we help free your capital so you can drill more wells. Just contact us at the address listed below.

We help you
conserve capital for
what you do best.

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The Oil Producing Industry in LOUISIANA

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FELICIANA
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ST. CHARLES
ST. BERNARD
ST. MARY
PLAQUEMINES
TERREBONNE

● Parishes with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Parishes	64
2.	Number of Parishes with oil and/or gas production	62
3.	Total land area of State (acres)	28,755,200
4.	Area proved productive of oil and/or gas (acres)	7,000,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	9,100,000
6.	Percent of total land area productive or leased	56.0
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 93,643,147
8.	Average field price of crude oil per barrel in 1981	$ 35.62
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 16,072,314
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 13,894,260
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 29,966,574
12.	Percent petroleum value to total all minerals	96.8%
13.	Principal mineral products in order of value:	
	1st ... Natural Gas	
	2nd ... Crude Petroleum	
	3rd ... Salt	
14.	Number of employees engaged in crude oil and natural gas production	94,721
15.	First year of production of crude oil	1902
	natural gas	1905
16.	First recorded production of crude oil (barrels) ... 1902	549,000
	natural gas (Mcf) ... 1905	31
17.	Geophysical Activity—Crew months worked in 1981	501

Production & Reserves

18.	Year of largest production (crude oil)	1971
19.	Crude oil produced in year of largest production (barrels)	935,243,000
20.	Percent of crude oil produced by stripper wells	1.6%

21.	Number of producing wells at end of 1981: Crude Oil	25,320
	Gas & Gas Distillate	12,763
	Total	38,083
22.	Average daily production of crude oil per well at end of 1981	20.1
23.	Percent of wells pumping or on artificial lift	84.7%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	1,459,562	308,964	1,768,526
1979	1,341,608	340,548	1,682,156
1980	1,281,806	305,000*	1,586,806
1981	1,236,208	315,000*	1,551,208

*Estimated

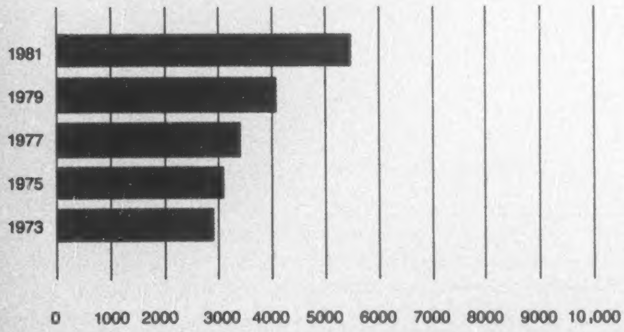
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	371	104	475	4,086
Estimated Production	400	182	582	6,893
Net Change in Reserves	-29	-78	-107	-2,807

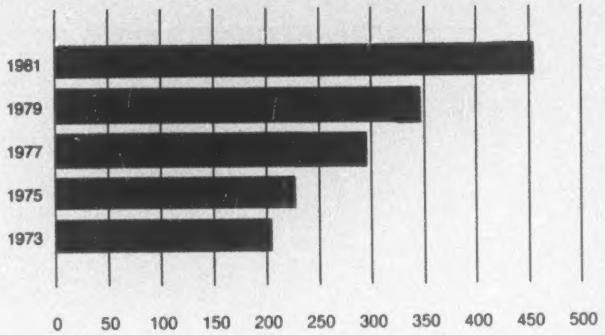
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	23,343	3,033	26,376	207,120
Total Production	20,592	1,687	22,279	158,735
Proved Reserves Dec. 31, 1980	2,751	1,346	4,097	48,385

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		456
28.	Deepest producing well drilled to January 1, 1982	*Gas*	21,862
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	25,703

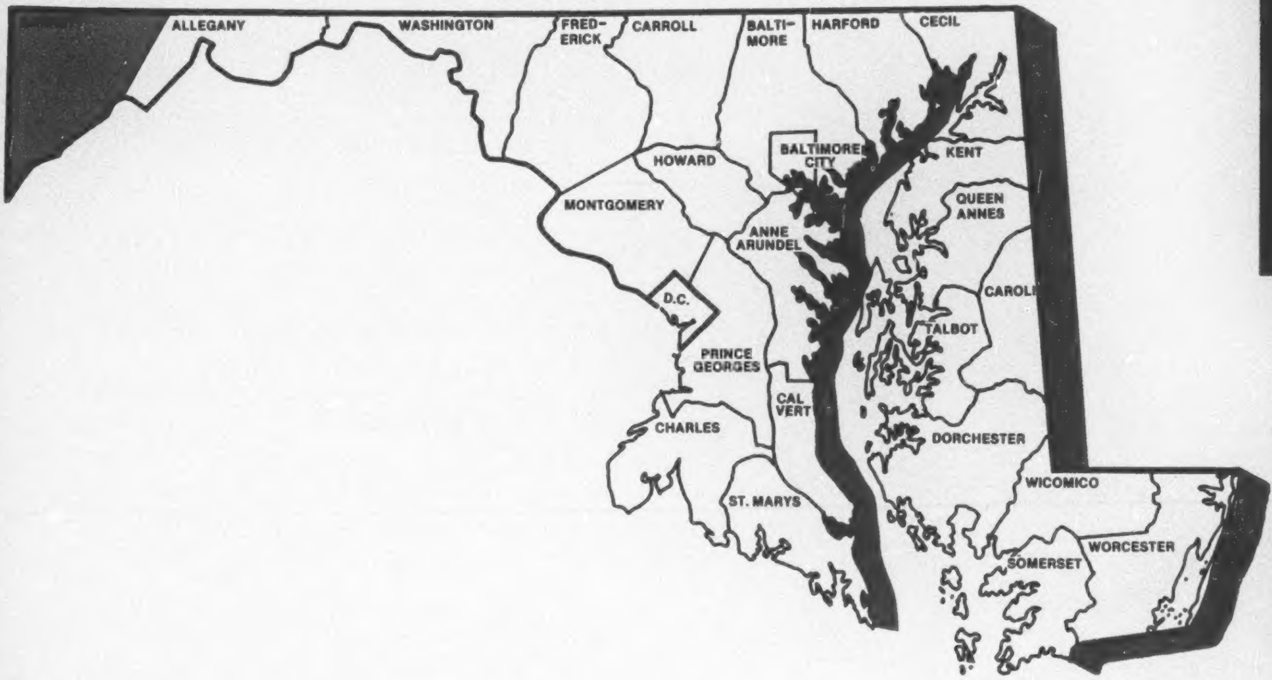
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	43	4.5
Gas Wells	77	8.0
Dry Wells	837	87.5
Service Wells	0	0
Total Wells	957	100.0
Average Depth per well	9,559	
Total Footage	9,147,875	
Development Wells		
Oil Wells	1,592	34.5
Gas Wells	1,601	34.7
Dry Wells	1,229	26.6
Service Wells	194	4.2
Total Wells	4,616	100.0
Average Depth per well	5,371	
Total Footage	24,792,825	
Total Wells		
Oil Wells	1,635	29.3
Gas Wells	1,678	30.1
Dry Wells	2,066	37.1
Service Wells	194	3.5
Total Wells	5,573	100.0
Average Depth per well	6,092	
Total Footage	33,940,700	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	72,805	46.5
Gas	25,536	16.3
Dry	58,309	37.2
Total	156,650	100.0

The Oil Producing Industry in MARYLAND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CAL VERT
CHARLES
DORCHESTER
WICOMICO
ST. MARYS
WORCESTER
SOMERSET

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	23
2.	Number of Counties with oil and/or gas production	1
3.	Total land area of State (acres)	6,330,240
4.	Area proved productive of oil and/or gas (acres)	14,200
5.	Estimated non-productive area leased January 1, 1982 (acres)	480,000
6.	Percent of total land area productive or leased	7.8
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	6,830
8.	Average field price of crude oil per barrel in 1981	$ —
9.	Value at wells of crude oil produced in 1981 (Thous.)	Not Applicable
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 475
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 475
12.	Percent petroleum value to total all minerals	Not Applicable

13. Principal mineral products in order of value:
    - 1st .... Coal
    - 2nd .... Crushed Stone
    - 3rd .... Portland Cement

14.	Number of employees engaged in crude oil and natural gas production		67
15.	First year of natural gas production		1943
16.	First recorded production of natural gas (Mcf)	1949	3,422
17.	Geophysical Activity—Crew months worked in 1981		6

Production & Reserves

18.	Year of largest production (natural gas)	1957
19.	Natural gas produced in year of largest production (Mcf)	4,649
20.	Percent of crude oil produced by stripper wells	Not Applicable

21. Number of producing wells at end of 1981: Gas & Gas Distillate 10

22. Average daily production of natural gas per well at end of 1981 (Mcf)..... 100

23. Percent of wells pumping or on artificial lift .... Not Applicable

24. Average production in Mcf daily:

	Crude Oil	*Natural Gas*
1978	0	252
1979	0	247
1980	0	235
1981	0	274

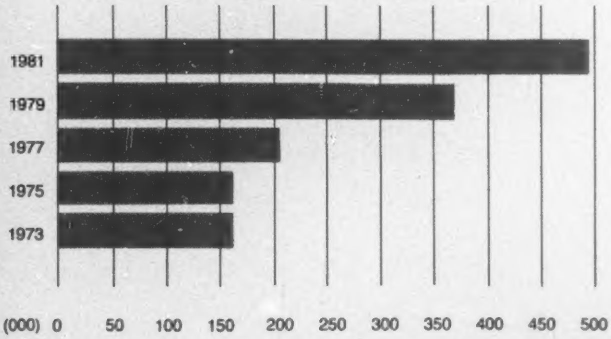
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
	(Million Barrels)			
New Reserves Found	Not Available			
Estimated Production				
Net Change in Reserves				

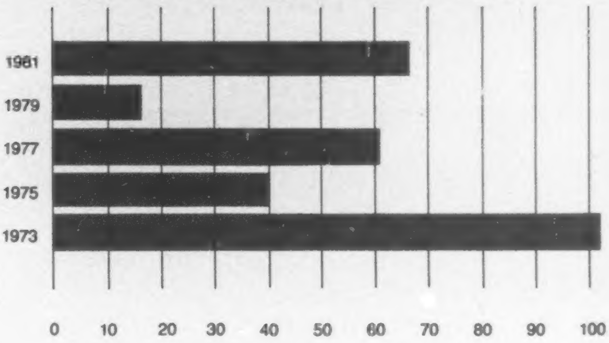
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
	(Million Barrels)			
Total Reserves Found	Not Available			
Total Production				
Proved Reserves Dec. 31, 1980				

ACREAGE UNDER LEASE FOR OIL & GAS



NUMBER OF EMPLOYEES ENGAGED IN CRUDE OIL & NATURAL GAS PRODUCTION



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) .... ◄1

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 8,658

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 11,617

30. Wells and footage drilled in 1981:

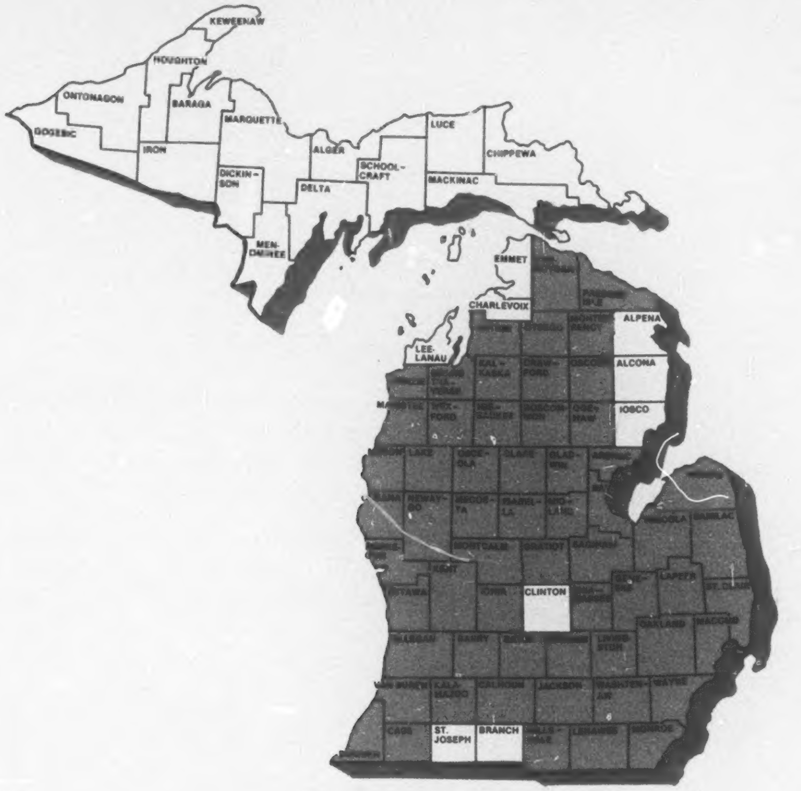
	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	0	0
Total Wells	0	0
Average Depth per well	0	
Total Footage	0	
Development Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	0	0
Total Wells	0	0
Average Depth per well	0	
Total Footage	0	
Total Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	0	0
Total Wells	0	0
Average Depth per well	0	
Total Footage	0	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	0	0
Gas	72	61.5
Dry	45	38.5
Total	117	100.0

◄Less than

The Oil Producing Industry in MICHIGAN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HOUGHTON
ONTONAGON
BARAGA
GOGEBIC
MARQUETTE
IRON
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LUCE
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DELTA
MEN-OMINEE
EMMET
CHARLEVOIX
ALPENA
LEE-LANAU
ALCONA
IOSCO
CLINTON
ST. JOSEPH
BRANCH

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		83
2.	Number of Counties with oil and/or gas production		59
3.	Total land area of State (acres)		36,362,880
4.	Area proved productive of oil and/or gas (acres)		574,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		13,500,000
6.	Percent of total land area productive or leased		38.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	5,349,947
8.	Average field price of crude oil per barrel in 1981	$	36.02
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	1,176,593
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	407,995
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	1,584,588
12.	Percent petroleum value to total all minerals		42.4%

13. Principal mineral products in order of value:
    - 1st .... Crude Petroleum
    - 2nd .... Iron Ore
    - 3rd .... Natural Gas

14.	Number of employees engaged in crude oil and natural gas production		4,700
15.	First year of production of crude oil		1889
	natural gas		1909
16.	First recorded production of crude oil (barrels)	1912	4,000
	natural gas (Mcf)	1909	510
17.	Geophysical Activity—Crew months worked in 1981		239

Production & Reserves

18.	Year of largest production (crude oil)	1978
19.	Crude oil produced in year of largest production (barrels)	34,667,000
20.	Percent of crude oil produced by stripper wells	14.4%*

*Estimated

21. Number of producing wells at end of 1981: Crude Oil 4,417
Gas & Gas Distillate 667
Total..................... 5,084

22. Average daily production of crude oil per well at end of 1981.............. 20.8

23. Percent of wells pumping or on artificial lift 85.7%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	94,978	27,976	122,904
1979	95,512	30,685*	126,197
1980	89,489	32,000*	121,489
1981	89,493	31,500*	120,993

*Estimated

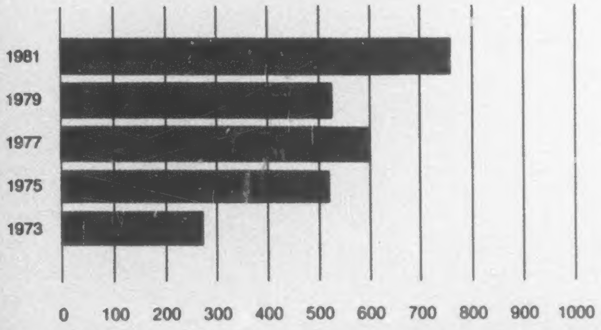
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	83	14	97	394
Estimated Production	37	14	51	177
Net Change in Reserves	46	0	46	217

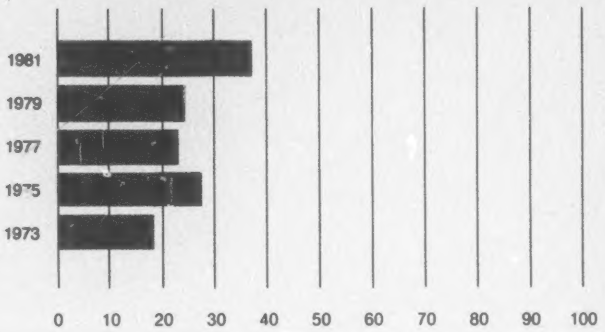
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	1,041	171	1,212	1,862
Total Production	836	59	895	311
Proved Reserves Dec. 31, 1980	205	112	317	1,551

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 37

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 7,512

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 17,466

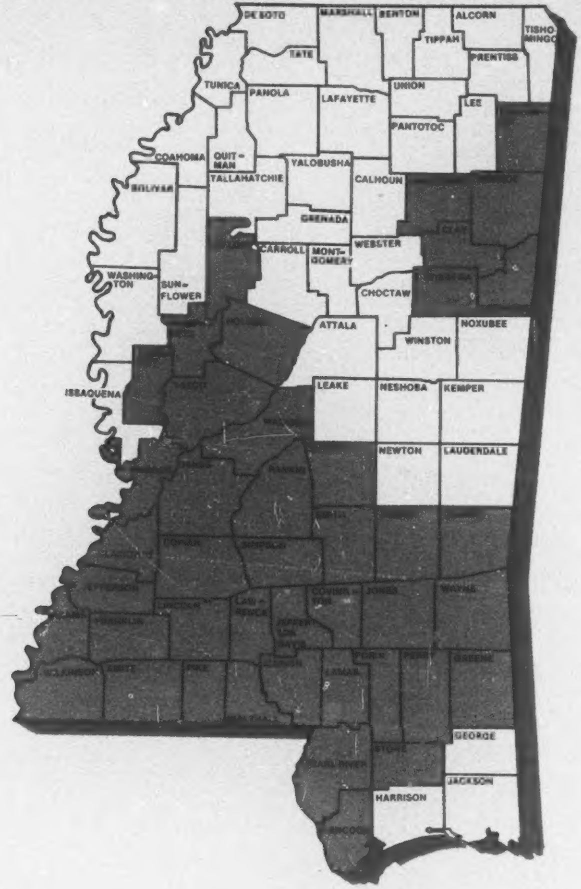
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	47	12.4
Gas Wells	18	4.7
Dry Wells	316	82.9
Service Wells	0	0
Total Wells	381	100.0
Average Depth per well	4,376	
Total Footage	1,667,338	
Development Wells		
Oil Wells	210	54.4
Gas Wells	24	6.2
Dry Wells	130	33.8
Service Wells	21	5.5
Total Wells	385	100.0
Average Depth per well	3,674	
Total Footage	1,414,456	
Total Wells		
Oil Wells	257	33.6
Gas Wells	42	5.5
Dry Wells	446	58.2
Service Wells	21	2.7
Total Wells	766	100.0
Average Depth per well	4,023	
Total Footage	3,081,794	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	12,692	39.8
Gas	2,520	7.9
Dry	16,651	52.3
Total	31,863	100.0

The Oil Producing Industry in MISSISSIPPI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ISSAQUENA
LEAKE
NESHOBA
KEMPER
NEWTON
LAUDERDALE
GEORGE
JACKSON
HARRISON

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		82
2.	Number of Counties with oil and/or gas production		43
3.	Total land area of State (acres)		30,269,440
4.	Area proved productive of oil and/or gas (acres)		626,500
5.	Estimated non-productive area leased January 1, 1982 (acres)		11,300,000
6.	Percent of total land area productive or leased		39.4
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	7,496,547
8.	Average field price of crude oil per barrel in 1981	$	32.72
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	1,125,551
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	569,780
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	1,695,331
12.	Percent petroleum value to total all minerals		91.2%

2

13.	Principal mineral products in order of value:		
	1st .... Crude Petroleum		
	2nd .... Natural Gas		
	3rd .... Sand & Gravel		
14.	Number of employees engaged in crude oil and natural gas production		11,778
15.	First year of production of crude oil		1889
	natural gas		1923
16.	First recorded production of crude oil (barrels)	1926	107,000
	natural gas (Mcf)	1926	5,000
17.	Geophysical Activity—Crew months worked in 1981		175

Production & Reserves

18.	Year of largest production (crude oil)	1970
19.	Crude oil produced in year of largest production (barrels)	65,119,000
20.	Percent of crude oil produced by stripper wells	5.3%

21. Number of producing wells at end of 1981:

Crude Oil	3,154
Gas & Gas Distillate	570
Total	3,724

22. Average daily production of crude oil per well at end of 1981 . . . . 30.2

23. Percent of wells pumping or on artificial lift 95.4%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	115,134	2,318*	117,452
1979	102,266	2,466*	104,732
1980	98,210	3,500*	101,710
1981	94,216	3,500*	97,716

*Estimated

25. Production and new reserves found in 1980:

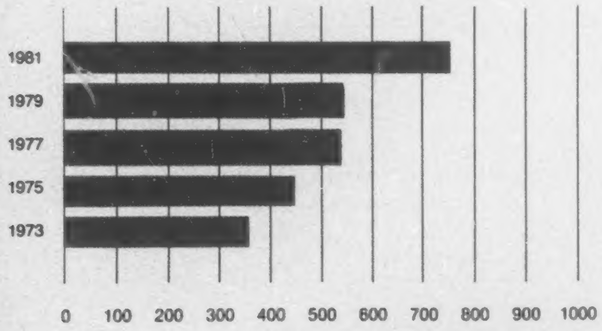
	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	−6**	12	6	436
Estimated Production	30	8	38	171
Net Change in Reserves	−36	4	−32	265

**Downward Revision of Previous Estimate

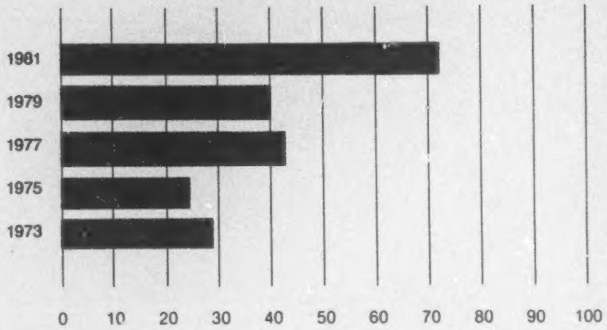
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	2,139	108	2,247	7,398
Total Production	1,937	88	2,025	5,622
Proved Reserves Dec. 31, 1980	202	20	222	1,776

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 72

28. Deepest producing well drilled to January 1, 1982 . . . . *Gas* 21,727

29. Deepest well drilled to January 1, 1982 (feet) . . . . *Dry Hole* 25,454

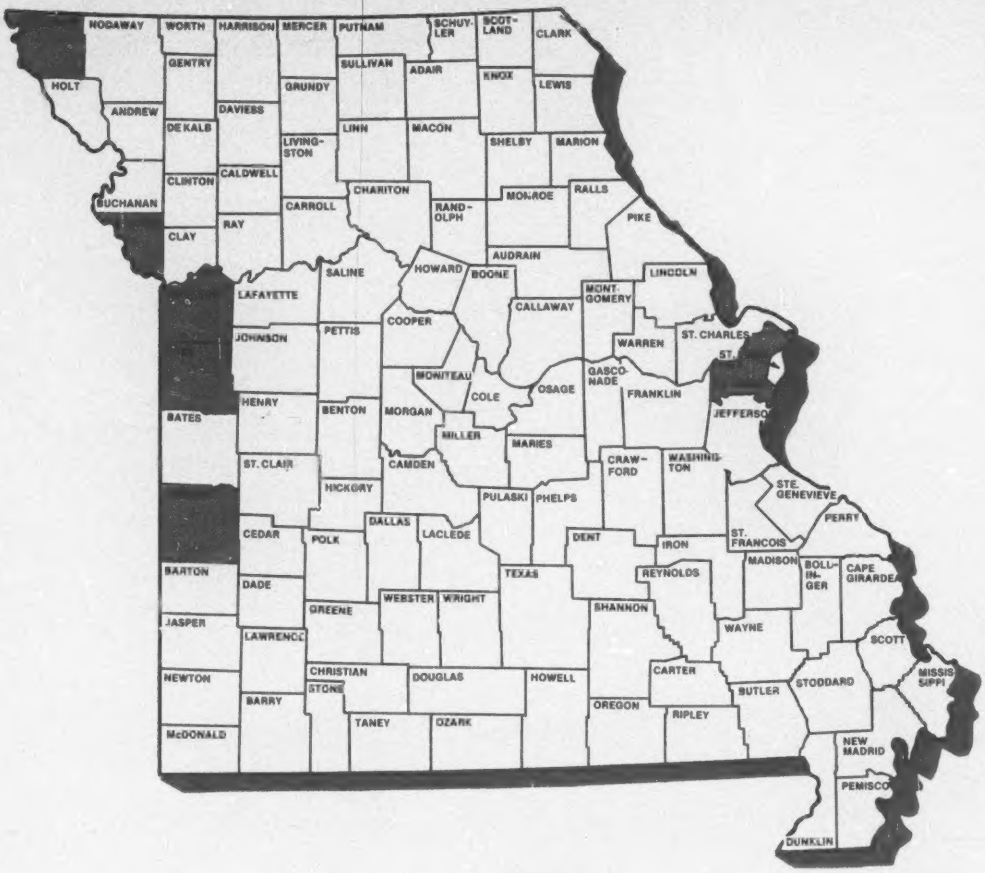
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	25	7.4
Gas Wells	20	5.8
Dry Wells	297	86.8
Service Wells	0	0
Total Wells	342	100.0
Average Depth per well	9,065	
Total Footage	3,100,147	
Development Wells		
Oil Wells	141	33.9
Gas Wells	70	16.8
Dry Wells	200	48.1
Service Wells	5	1.2
Total Wells	416	100.0
Average Depth per well	8,945	
Total Footage	3,721,034	
Total Wells		
Oil Wells	166	21.8
Gas Wells	90	11.9
Dry Wells	497	65.6
Service Wells	5	0.7
Total Wells	758	100.0
Average Depth per well	8,999	
Total Footage	6,821,181	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	6,810	33.2
Gas	1,069	5.2
Dry	12,635	61.6
Total	20,514	100.0

The Oil Producing Industry in MISSOURI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HOLT
ANDREW
GRUNDY
DAVIESS
DE KALB
LINN
MACON
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STODDARD
BUTLER
BARRY
OREGON
RIPLEY
TANEY
OZARK
McDONALD
NEW MADRID
PEMISCOT
DUNKLIN

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	114
2.	Number of Counties with oil and/or gas production	6
3.	Total land area of State (acres)	44,156,800
4.	Area proved productive of oil and/or gas (acres)	12,298
5.	Estimated non-productive area leased January 1, 1982 (acres)	600,000
6.	Percent of total land area productive or leased	1.4
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 19,447
8.	Average field price of crude oil per barrel in 1981	$ 34.38
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 7,770
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ –
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 7,770
12.	Percent petroleum value to total all minerals	0.7%
13.	Principal mineral products in order of value:	
	1st	Lead
	2nd	Portland Cement
	3rd	Crushed Stone
14.	Number of employees engaged in crude oil and natural gas production	300
15.	First year of production of crude oil	1888
	natural gas	1887
16.	First recorded production of crude oil (barrels) 1889	20
	natural gas (Mcf) 1906	33,560
17.	Geophysical Activity—Crew months worked in 1981	None Reported

Production & Reserves

18.	Year of largest production (crude oil)	1981
19.	Crude oil produced in year of largest production (barrels)	226,000
20.	Percent of crude oil produced by stripper wells	98.0%

21. Number of producing wells at end of 1981:

Crude Oil	421
Gas & Gas Distillate	0
Total	421

22. Average daily production of crude oil per well at end of 1981 .... 1.7

23. Percent of wells pumping or on artificial lift 100.0%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	148	0	148
1979	249	0	249
1980	355	0	355
1981	619	0	619

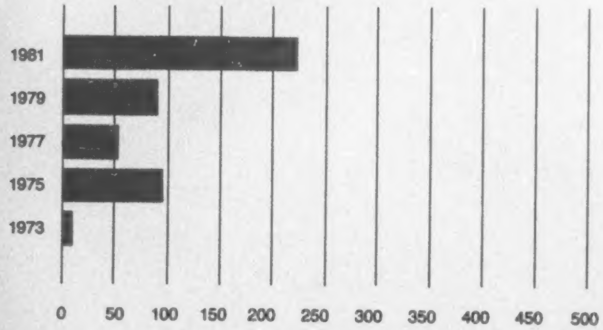
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found		Not Available		
Estimated Production				
Net Change in Reserves				

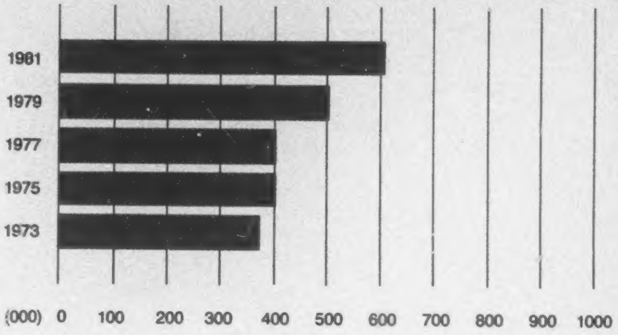
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found		Not Available		
Total Production				
Proved Reserves Dec. 31, 1980				

TOTAL WELLS DRILLED



ACREAGE UNDER LEASE FOR OIL & GAS



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 0

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 2,975

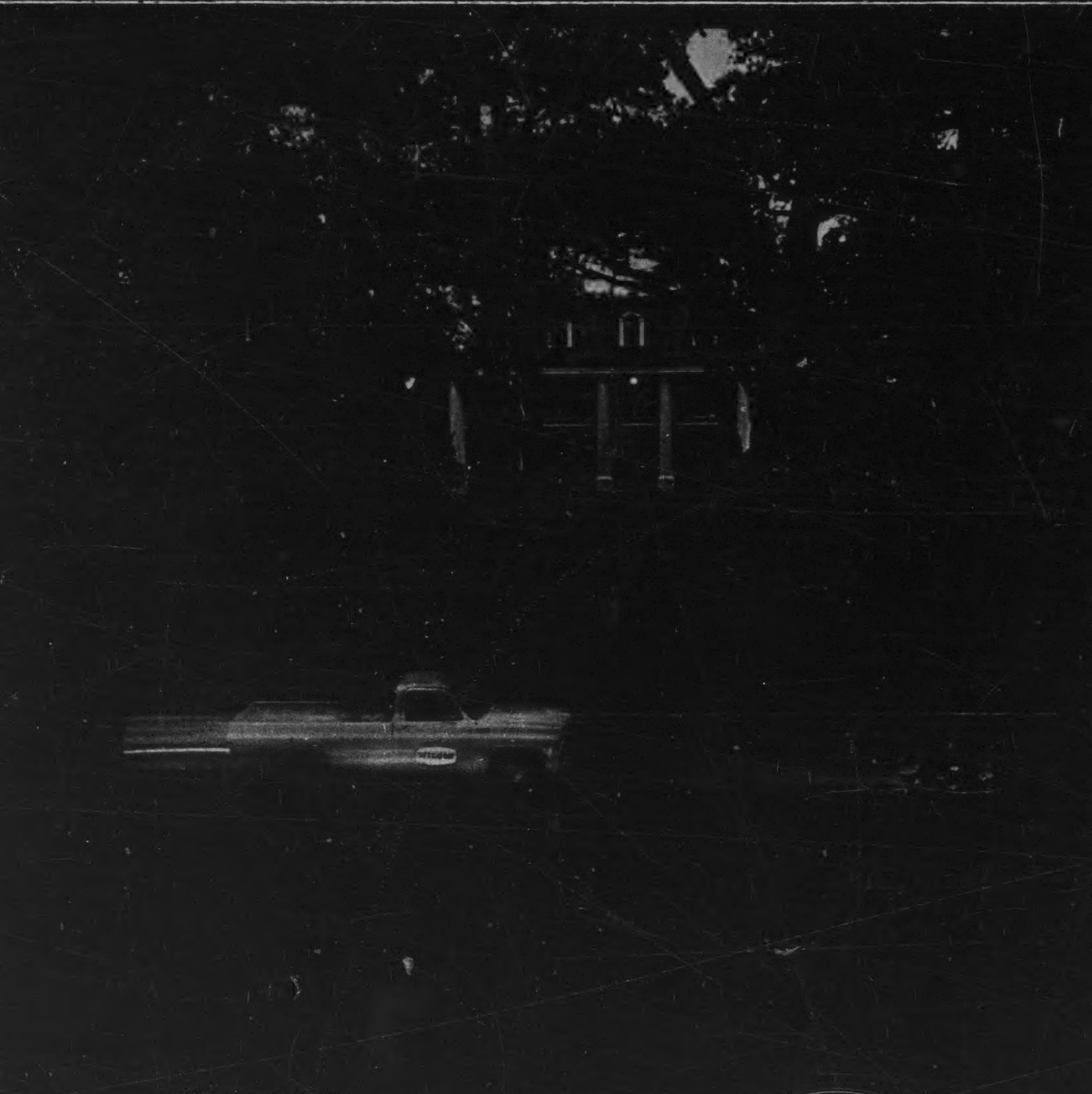
29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 4,909

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	9	26.5
Gas Wells	1	2.9
Dry Wells	24	70.6
Service Wells	0	0
Total Wells	34	100.0
Average Depth per well	680	
Total Footage	23,125	
Development Wells		
Oil Wells	51	27.0
Gas Wells	2	1.1
Dry Wells	26	13.7
Service Wells	110	58.2
Total Wells	189	100.0
Average Depth per well	287	
Total Footage	54,326	
Total Wells		
Oil Wells	60	26.9
Gas Wells	3	1.3
Dry Wells	50	22.4
Service Wells	110	49.4
Total Wells	223	100.0
Average Depth per well	347	
Total Footage	77,451	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	331	24.2
Gas	182	13.3
Dry	854	62.5
Total	1,367	100.0



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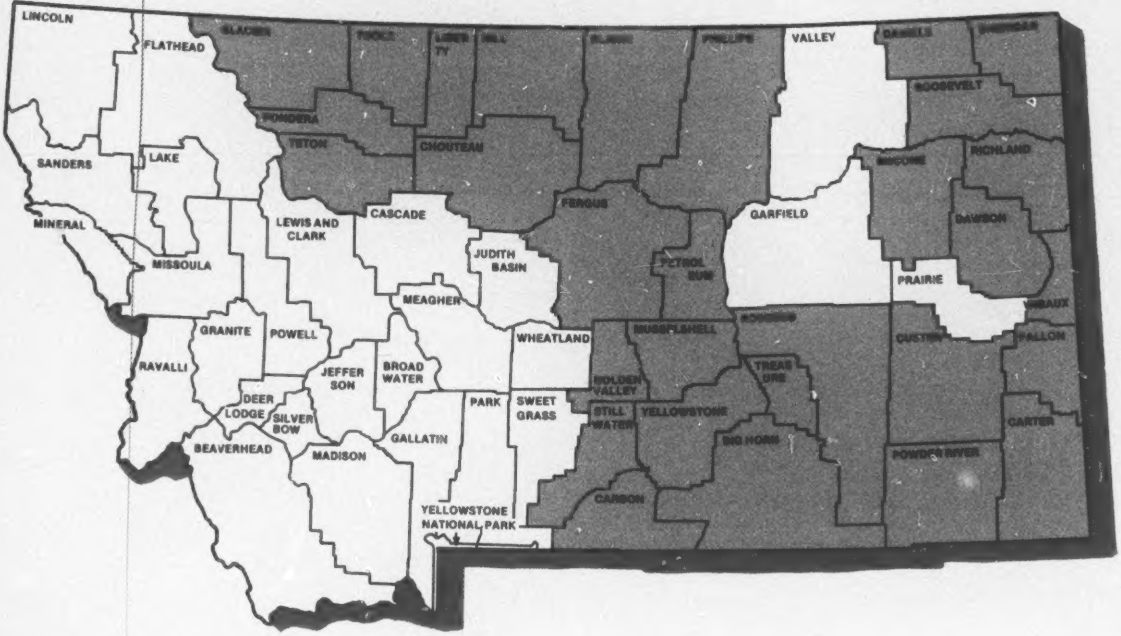
The Oil Producing Industry in MONTANA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TETON
CHOUTEAU
SANDERS
LAKE
McCONE
RICHLAND
MINERAL
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CASCADE
FERGUS
GARFIELD
DAWSON
MISSOULA
JUDITH BASIN
PETROL EUM
PRAIRIE
MEAGHER
WIBAUX
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POWELL
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CUSTER
FALLON
WHEATLAND
RAVALLI
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BROAD WATER
GOLDEN VALLEY
TREAS URE
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SILVER BOW
PARK
SWEET GRASS
STILL WATER
YELLOWSTONE
CARTER
BIG HORN
BEAVERHEAD
MADISON
GALLATIN
POWDER RIVER
CARBON
YELLOWSTONE NATIONAL PARK

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	56
2.	Number of Counties with oil and/or gas production	29
3.	Total land area of State (acres)	93,175,680
4.	Area proved productive of oil and/or gas (acres)	940,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	37,230,000
6.	Percent of total land area productive or leased	41.0
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 5,254,438
8.	Average field price of crude oil per barrel in 1981	$ 35.39
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 1,090,472
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 84,465
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 1,174,937
12.	Percent petroleum value to total all minerals	54.0%
13.	Principal mineral products in order of value: 1st .... Crude Petroleum 2nd .... Coal 3rd .... Copper	
14.	Number of employees engaged in crude oil and natural gas production	6,852
15.	First year of production of crude oil	1916
	natural gas	1915
16.	First recorded production of crude oil (barrels) 1916	45,000
	natural gas (Mcf) 1915	6
17.	Geophysical Activity—Crew months worked in 1981	388

Production & Reserves

18.	Year of largest production (crude oil)	1968
19.	Crude oil produced in year of largest production (barrels)	48,460,000
20.	Percent of crude oil produced by stripper wells	9.2%

21. Number of producing wells at end of 1981:

Crude Oil	3,968
Gas & Gas Distillate	2,142
Total	6,110

22. Average daily production of crude oil per well at end of 1981 .... 21.2

23. Percent of wells pumping or on artificial lift 90.5%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	83,471	1,193*	84,664
1979	82,074	1,644*	83,718
1980	80,831	2,150*	82,981
1981	84,419	2,500*	86,919

*Estimated

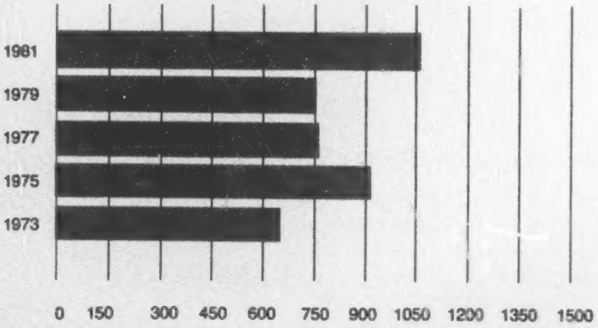
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	56	7	63	533
Estimated Production	29	1	30	62
Net Change in Reserves	27	6	33	471

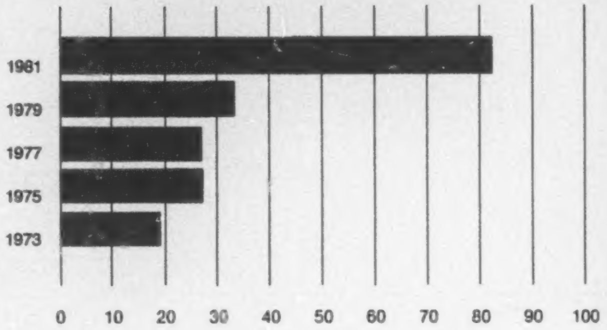
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	1,225	41	1,266	3,114
Total Production	1,046	25	1,071	1,806
Proved Reserves Dec. 31, 1980	179	16	195	1,308

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 82

28. Deepest producing well drilled to January 1, 1982 .... Oil 12,915

29. Deepest well drilled to January 1, 1982 (feet) .... Dry Hole 17,375

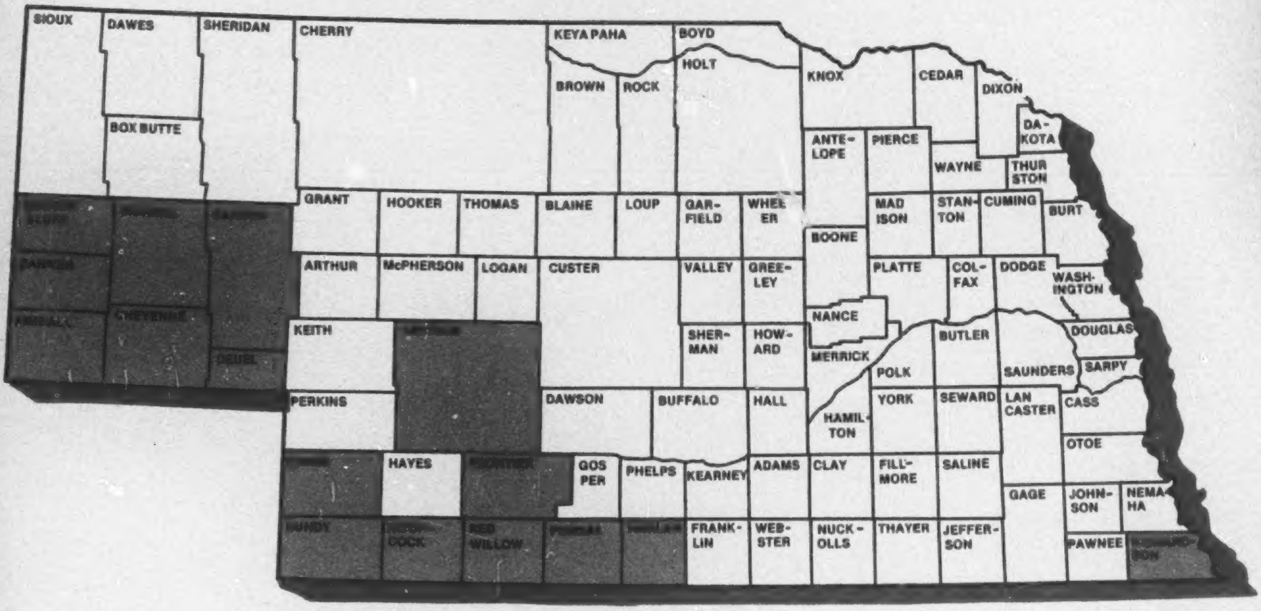
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	72	16.6
Gas Wells	39	9.1
Dry Wells	321	74.3
Service Wells	0	0
Total Wells	432	100.0
Average Depth per well	5,714	
Total Footage	2,468,237	
Development Wells		
Oil Wells	294	46.5
Gas Wells	184	29.1
Dry Wells	150	23.7
Service Wells	4	0.7
Total Wells	632	100.0
Average Depth per well	4,139	
Total Footage	2,615,870	
Total Wells		
Oil Wells	366	34.4
Gas Wells	223	20.9
Dry Wells	471	44.3
Service Wells	4	0.4
Total Wells	1,064	100.0
Average Depth per well	4,778	
Total Footage	5,084,107	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	9,321	36.9
Gas	3,639	14.4
Dry	12,289	48.7
Total	25,249	100.0

The Oil Producing Industry in NEBRASKA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BOX BUTTE
ANTE-LOPE
PIERCE
WAYNE
THUR STON
GRANT
HOOKER
THOMAS
BLAINE
LOUP
GAR-FIELD
WHEEL ER
MAD ISON
STAN-TON
CUMING
BURT
BOONE
ARTHUR
McPHERSON
LOGAN
CUSTER
VALLEY
GREE-LEY
PLATTE
COL-FAX
DODGE
WASH-INGTON
CHEYENNE
NANCE
KEITH
SHER-MAN
HOW-ARD
MERRICK
BUTLER
DOUGLAS
DEUEL
POLK
SAUNDERS
SARPY
PERKINS
DAWSON
BUFFALO
HALL
HAMIL-TON
YORK
SEWARD
LAN CASTER
CASS
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HAYES
GOS PER
PHELPS
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FILL-MORE
SALINE
GAGE
JOHN-SON
NEMA-HA
COCK
RED WILLOW
FRANK-LIN
WEB-STER
NUCK-OLLS
THAYER
JEFFER-SON
PAWNEE

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		93
2.	Number of Counties with oil and/or gas production		16
3.	Total land area of State (acres)		48,949,120
4.	Area proved productive of oil and/or gas (acres)		320,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		12,250,000
6.	Percent of total land area productive or leased		25.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	1,750,622
8.	Average field price of crude oil per barrel in 1981	$	35.64
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	237,754
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	4,500
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	242,254
12.	Percent petroleum value to total all minerals		70.7%

13. Principal mineral products in order of value:
    - 1st .... Crude Petroleum
    - 2nd .... Sand & Gravel
    - 3rd .... Crushed Stone

14.	Number of employees engaged in crude oil and natural gas production		1,053
15.	First year of production of crude oil		1939
	natural gas		1949
16.	First recorded production of crude oil (barrels)	1939	2,000
	natural gas (Mcf)	1951	20,000
17.	Geophysical Activity—Crew months worked in 1981		17

Production & Reserves

18.	Year of largest production (crude oil)	1962
19.	Crude oil produced in year of largest production (barrels)	24,894,000
20.	Percent of crude oil produced by stripper wells	35.9%

21. Number of producing wells at end of 1981:

Crude Oil	1,870
Gas & Gas Distillate	26
Total	1,896

22. Average daily production of crude oil per well at end of 1981 .... 9.7

23. Percent of wells pumping or on artificial lift 100.0%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	16,060	356	16,416
1979	16,625	274*	16,889
1980	17,049	250*	17,299
1981	18,277	250*	18,527

*Estimated

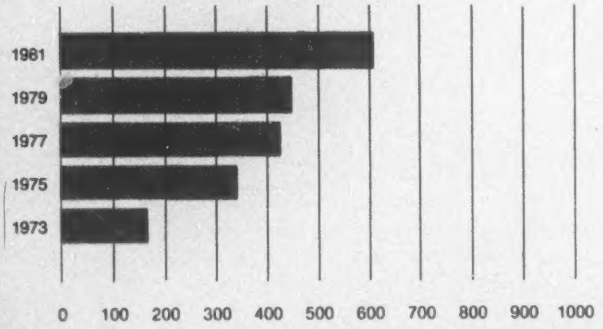
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	26	N.A.	26	N.A.
Estimated Production	5	N.A.	5	N.A.
Net Change in Reserves	21	N.A.	21	N.A.

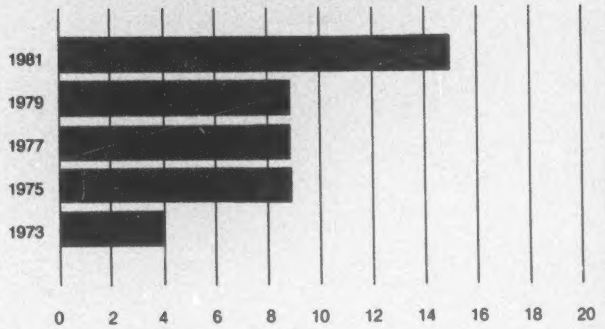
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	425	N.A.	425	N.A.
Total Production	379	N.A.	379	N.A.
Proved Reserves Dec. 31, 1980	46	N.A.	46	N.A.

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 15

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 7,438

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 9,971

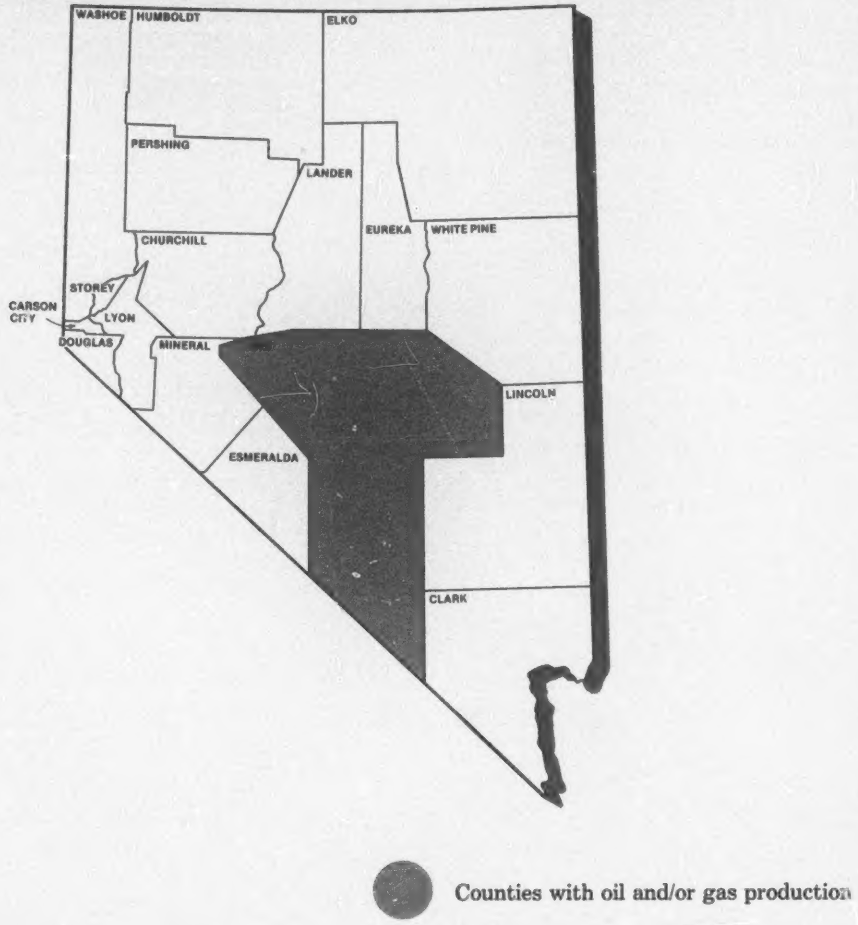
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	44	16.7
Gas Wells	7	2.7
Dry Wells	212	80.6
Service Wells	0	0
Total Wells	263	100.0
Average Depth per well	4,942	
Total Footage	1,299,621	
Development Wells		
Oil Wells	203	59.0
Gas Wells	1	0.3
Dry Wells	138	40.1
Service Wells	2	0.6
Total Wells	344	100.0
Average Depth per well	4,885	
Total Footage	1,680,578	
Total Wells		
Oil Wells	247	40.7
Gas Wells	8	1.3
Dry Wells	350	57.7
Service Wells	2	0.3
Total Wells	607	100.0
Average Depth per well	4,761	
Total Footage	2,980,199	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	4,671	30.1
Gas	181	1.2
Dry	10,658	68.7
Total	15,510	100.0

The Oil Producing Industry in NEVADA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ELKO
PERSHING
LANDER
CHURCHILL
EUREKA
WHITE PINE
STOREY
CARSON CITY
LYON
DOUGLAS
MINERAL
LINCOLN
ESMERALDA
CLARK
● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		16
2.	Number of Counties with oil and/or gas production		1
3.	Total land area of State (acres)		70,328,960
4.	Area proved productive of oil and/or gas (acres)		4,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		23,550,000
6.	Percent of total land area productive or leased		33.5
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	76,943
8.	Average field price of crude oil per barrel in 1981	$	23.96
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	16,772
10.	Value at wells of natural gas produced in 1981 (Thous.)		Not Applicable
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	16,772
12.	Percent petroleum value to total all minerals		4.7%

13.	Principal mineral products in order of value:		
	1st	Gold	
	2nd	Barite	
	3rd	Sand & Gravel	
14.	Number of employees engaged in crude oil and natural gas production		744
15.	First year of production of crude oil		1954
16.	First recorded production of crude oil (barrels)	1954	33,000
17.	Geophysical Activity—Crew months worked in 1981		41

Production & Reserves

18.	Year of largest production (crude oil)	1979
19.	Crude oil produced in year of largest production (barrels)	1,233,000
20.	Percent of crude oil produced by stripper wells	1.1%

21. Number of producing wells at end of

1981: Crude Oil	60
Gas & Gas Distillate	0
Total	60

22. Average daily production of crude oil per well at end of 1981 60

23. Percent of wells pumping or on artificial lift .... Not Applicable

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	3,167	0	3,167
1979	3,384	0	3,384
1980	2,404	0	2,404
1981	1,918	0	1,918

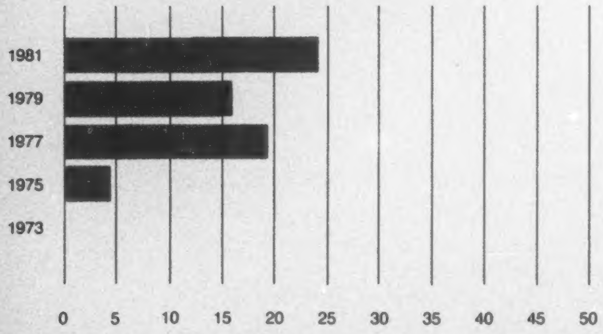
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found		Not Available		
Estimated Production				
Net Change in Reserves				

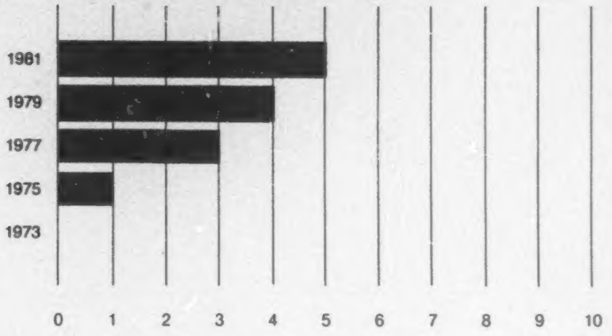
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found		Not Available		
Total Production				
Proved Reserves Dec. 31, 1980				

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 5

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 8,581

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 19,562

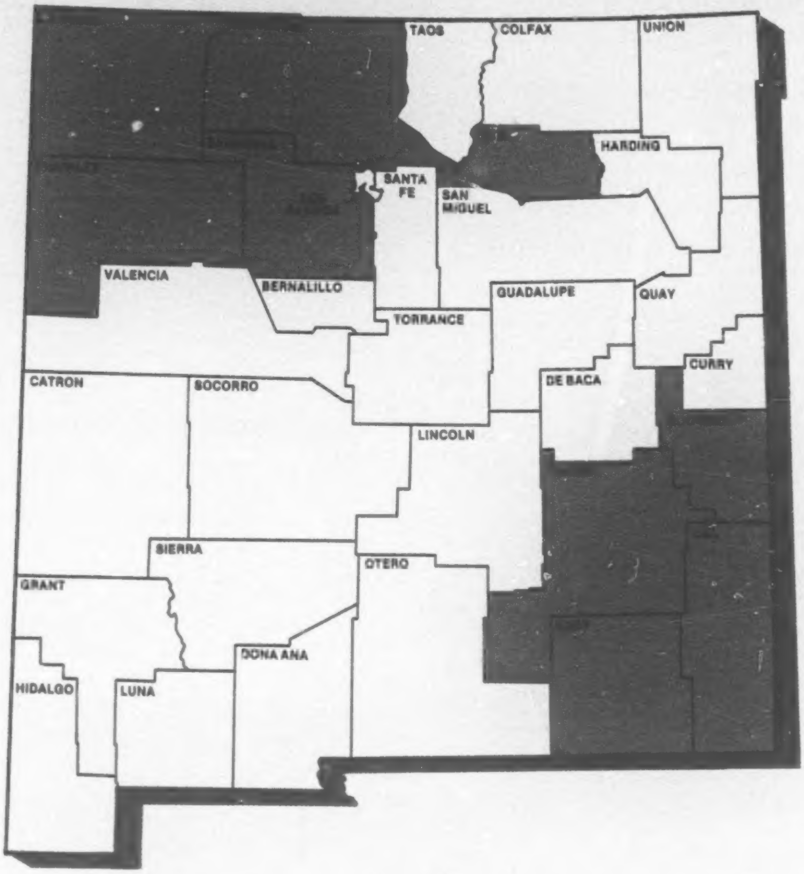
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	1	5.0
Dry Wells	19	95.0
Service Wells	0	0
Total Wells	20	100.0
Average Depth per well	6,830	
Total Footage	136,602	
Development Wells		
Oil Wells	1	25.0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	3	75.0
Total Wells	4	100.0
Average Depth per well	2,282	
Total Footage	9,128	
Total Wells		
Oil Wells	1	4.2
Gas Wells	1	4.2
Dry Wells	19	79.2
Service Wells	3	12.4
Total Wells	24	100.0
Average Depth per well	6,072	
Total Footage	145,730	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	30	11.7
Gas	1	0.4
Dry	225	87.9
Total	256	100.0

The Oil Producing Industry in NEW MEXICO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CATRON
SOCORRO
LINCOLN
SIERRA
OTERO
GRANT
DONA ANA
HIDALGO
LUNA

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	32
2.	Number of Counties with oil and/or gas production	9
3.	Total land area of State (acres)	77,703,680
4.	Area proved productive of oil and/or gas (acres)	3,720,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	26,300,000
6.	Percent of total land area productive or leased	38.6
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 14,844,540
8.	Average field price of crude oil per barrel in 1981	$ 35.37
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 2,552,122
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 2,415,500
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 4,967,622
12.	Percent petroleum value to total all minerals	78.3%
13.	Principal mineral products in order of value:	
	1st	Natural Gas
	2nd	Crude Petroleum
	3rd	Copper
14.	Number of employees engaged in crude oil and natural gas production	16,328
15.	First year of production of crude oil	1911
	natural gas	1924
16.	First recorded production of crude oil (barrels) 1924	98,000
	natural gas (Mcf) 1926	921
17.	Geophysical Activity—Crew months worked in 1981	136

Production & Reserves

18.	Year of largest production (crude oil)	1969
19.	Crude oil produced in year of largest production (barrels)	129,227,000
20.	Percent of crude oil produced by stripper wells	17.2%

21. Number of producing wells at end of 1981: Crude Oil 16,289
Gas & Gas Distillate 14,968
Total 31,257

22. Average daily production of crude oil per well at end of 1981 .... 11.9

23. Percent of wells pumping or on artificial lift 81.7%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	228,397	120,236	348,633
1979	218,216	122,740*	340,956
1980	205,803	123,000*	340,956
1981	197,685	123,700*	321,385

*Estimated

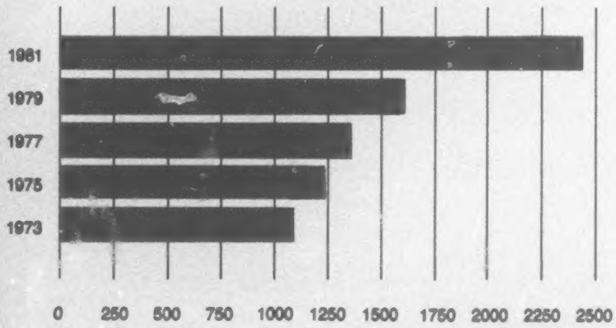
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	51	60	111	692
Estimated Production	67	49	116	1,127
Net Change in Reserves	-16	11	-5	-435

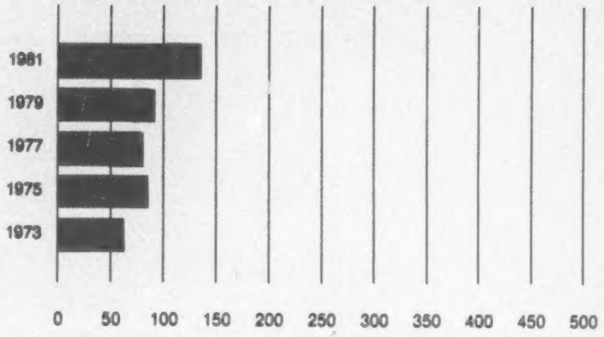
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	5,372	1,504	6,876	46,274
Total Production	4,825	963	5,788	32,318
Proved Reserves Dec. 31, 1980	547	541	1,088	13,956

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 135

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 17,544

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 22,296

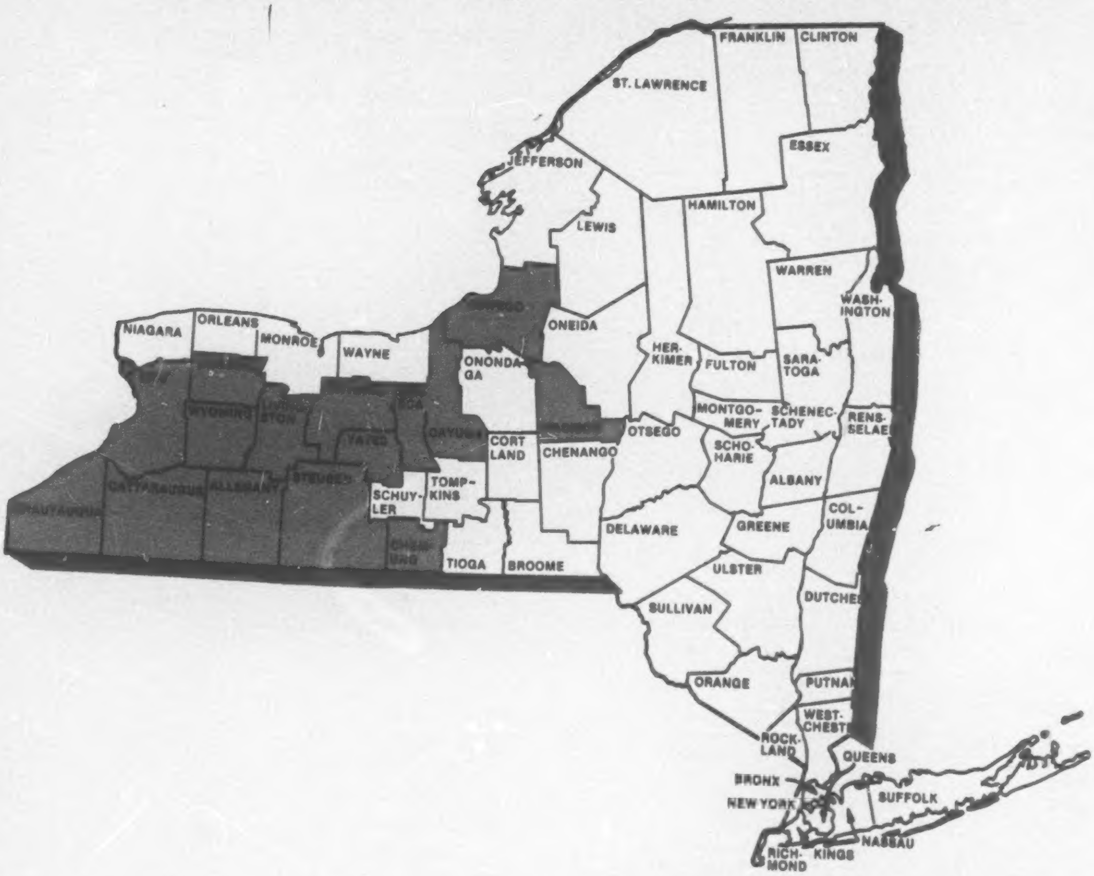
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	72	24.5
Gas Wells	85	28.9
Dry Wells	137	46.6
Service Wells	0	0
Total Wells	294	100.0
Average Depth per well	6,595	
Total Footage	1,938,986	
Development Wells		
Oil Wells	752	34.9
Gas Wells	1,161	53.8
Dry Wells	164	7.6
Service Wells	80	3.7
Total Wells	2,157	100.0
Average Depth per well	5,492	
Total Footage	11,846,561	
Total Wells		
Oil Wells	824	33.6
Gas Wells	1,246	50.8
Dry Wells	301	12.3
Service Wells	80	3.3
Total Wells	2,451	100.0
Average Depth per well	5,624	
Total Footage	13,785,547	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	26,173	50.1
Gas	14,928	28.5
Dry	11,205	21.4
Total	52,306	100.0

The Oil Producing Industry in NEW YORK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PUTNAM
WESTCHESTER
ROCKLAND
QUEENS
BRONX
NEW YORK
SUFFOLK
RICHMOND
KINGS
NASSAU

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		62
2.	Number of Counties with oil and/or gas production		15
3.	Total land area of State (acres)		30,611,840
4.	Area proved productive of oil and/or gas (acres)		1,110,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		4,600,000
6.	Percent of total land area productive or leased		18.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	875,178
8.	Average field price of crude oil per barrel in 1981	$	36.56
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	30,747
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	27,000
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	57,747
12.	Percent petroleum value to total all minerals		10.4%

13.	Principal mineral products in order of value:		
	1st .... Crushed Stone		
	2nd .... Salt		
	3rd .... Sand & Gravel		
14.	Number of employees engaged in crude oil and natural gas production		2,463
15.	First year of production of crude oil		1865
	natural gas		1885
16.	First recorded production of crude oil (barrels)	1865	100,000
	natural gas (Mcf)	1885	3,136,000
17.	Geophysical Activity—Crew months worked in 1981		7

Production & Reserves

18.	Year of largest production (crude oil)	1882
19.	Crude oil produced in year of largest production (barrels)	6,685,000
20.	Percent of crude oil produced by stripper wells	100.0%

21.	Number of producing wells at end of 1981: Crude Oil	5,300
	Gas & Gas Distillate	2,500
	Total	7,800
22.	Average daily production of crude oil per well at end of 1981	0.3
23.	Percent of wells pumping or on artificial lift	100.0%

24. Average production in barrels daily:

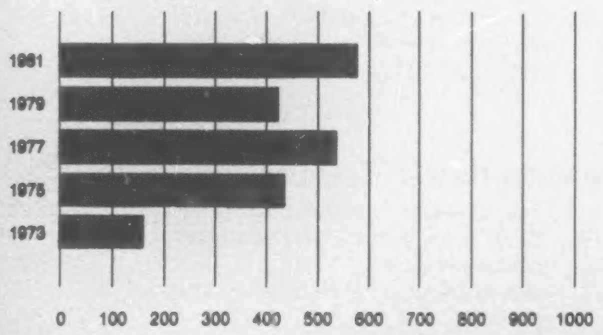
	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	2,334	0	2,334
1979	2,342	0	2,342
1980	2,301	0	2,301
1981	2,304	0	2,304

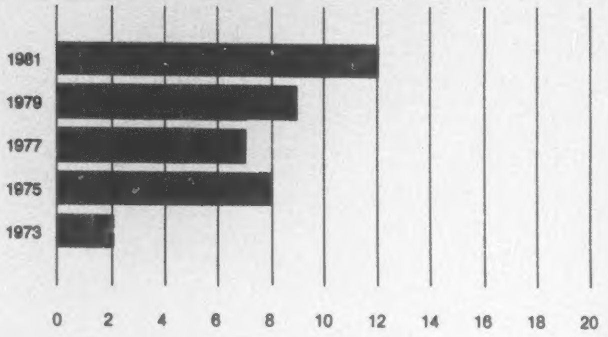
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	N.A.	N.A.	N.A.	7
Estimated Production	N.A.	N.A.	N.A.	10
Net Change in Reserves	N.A.	N.A.	N.A.	-3

26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	N.A.	N.A.	N.A.	794
Total Production	N.A.	N.A.	N.A.	586
Proved Reserves Dec. 31, 1980	N.A.	N.A.	N.A.	208


TOTAL WELLS DRILLED


ROTARY RIGS ACTIVE

Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)	12
28.	Deepest producing well drilled to January 1, 1982 *Gas*	5,425
29.	Deepest well drilled to January 1, 1982 (feet) *Dry Hole*	13,479

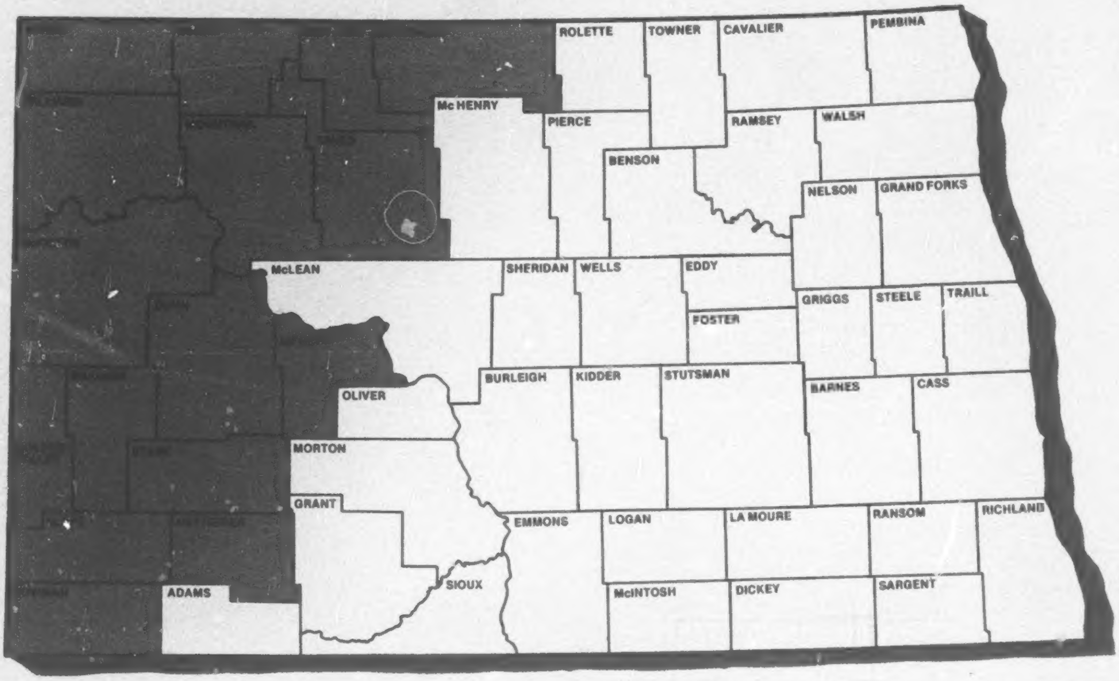
30. Wells and footage drilled in 1981:

	Number	Percent
Wildcat Wells		
Oil Wells	0	0
Gas Wells	79	73.1
Dry Wells	29	26.9
Service Wells	0	0
Total Wells	108	100.0
Average Depth per well	3,340	
Total Footage	360,738	
Development Wells		
Oil Wells	99	20.9
Gas Wells	360	76.1
Dry Wells	6	1.3
Service Wells	8	1.7
Total Wells	473	100.0
Average Depth per well	2,661	
Total Footage	1,258,497	
Total Wells		
Oil Wells	99	17.0
Gas Wells	439	75.6
Dry Wells	35	6.0
Service Wells	8	1.4
Total Wells	581	100.0
Average Depth per well	2,787	
Total Footage	1,619,235	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	Percent
Oil	8,946	71.2
Gas	2,627	20.9
Dry	986	7.9
Total	12,559	100.0

The Oil Producing Industry in NORTH DAKOTA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RICHLAND
SIOUX
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DICKEY
SARGENT
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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		53
2.	Number of Counties with oil and/or gas production		16
3.	Total land area of State (acres)		44,334,720
4.	Area proved productive of oil and/or gas (acres)		530,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		22,390,000
6.	Percent of total land area productive or leased		51.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	5,053,184
8.	Average field price of crude oil per barrel in 1981	$	32.92
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	1,641,795
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	72,345
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	1,714,140
12.	Percent petroleum value to total all minerals		88.3%

13.	Principal mineral products in order of value:		
	1st	Crude Petroleum	
	2nd	Coal	
	3rd	Natural Gas	
14.	Number of employees engaged in crude oil and natural gas production		9,286
15.	First year of production of crude oil		1951
	natural gas		1907
16.	First recorded production of crude oil (barrels)	1951	25,000
	natural gas (Mcf)	1928	200
17.	Geophysical Activity—Crew months worked in 1981		268

Production & Reserves

18.	Year of largest production (crude oil)	1981
19.	Crude oil produced in year of largest production (barrels)	45,707,000
20.	Percent of crude oil produced by stripper wells	3.0%

21.	Number of producing wells at end of 1981: Crude Oil	2,570
	Gas & Gas Distillate	51
	Total	2,621
22.	Average daily production of crude oil per well at end of 1981	48.2
23.	Percent of wells pumping or on artificial lift	25.8%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	67,978	4,447	72,425
1979	84,696	6,027*	90,723
1980	110,210	6,600*	116,810
1981	125,225	6,500*	131,725

*Estimated

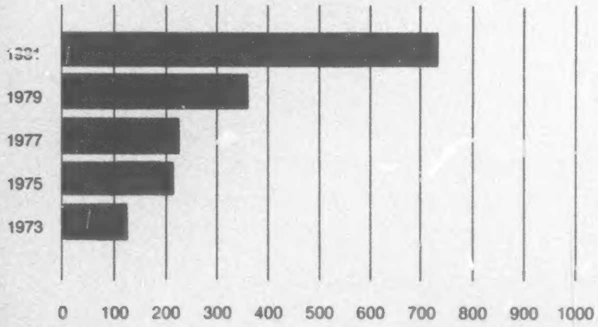
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	41	18	59	150
Estimated Production	38	4	42	4
Net Change in Reserves	3	14	17	109

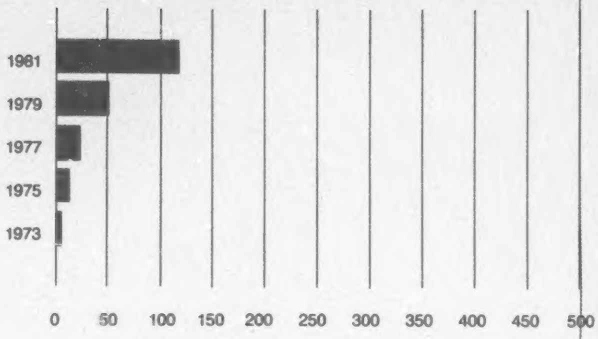
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	807	122	929	1,498
Total Production	593	61	654	904
Proved Reserves Dec. 31, 1980	214	61	275	594

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		119
28.	Deepest producing well drilled to January 1, 1982	*Gas*	14,343
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	15,380

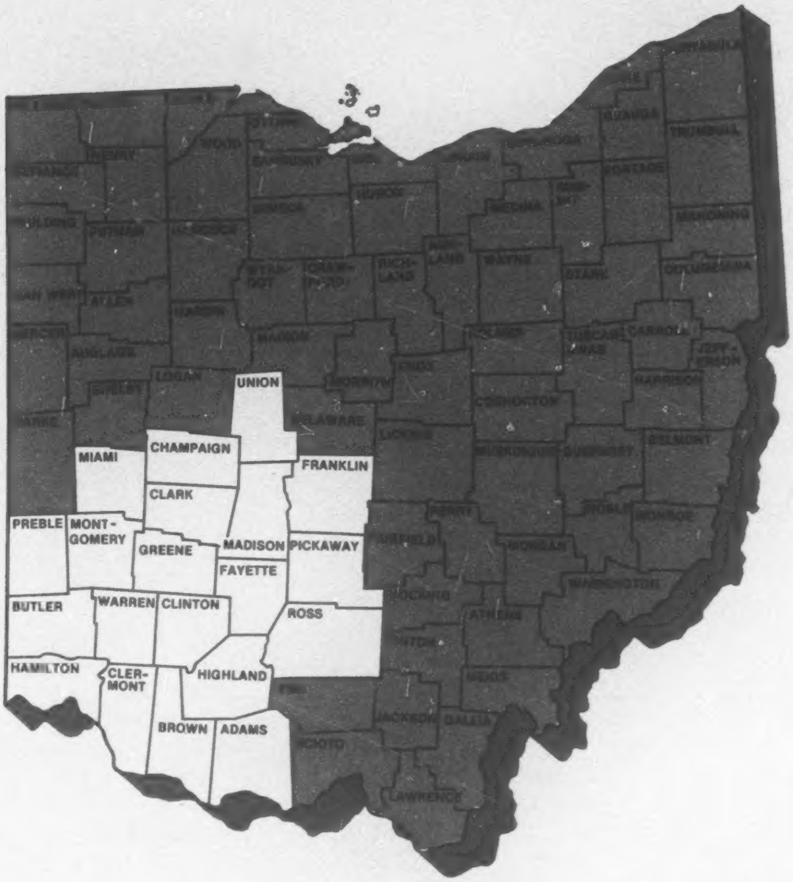
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	101	26.8
Gas Wells	8	2.1
Dry Wells	268	71.1
Service Wells	0	0
Total Wells	377	100.0
Average Depth per well	9,755	
Total Footage	3,677,649	
Development Wells		
Oil Wells	274	74.9
Gas Wells	11	3.0
Dry Wells	79	21.6
Service Wells	2	0.5
Total Wells	366	100.0
Average Depth per well	8,483	
Total Footage	3,104,784	
Total Wells		
Oil Wells	375	50.5
Gas Wells	19	2.5
Dry Wells	347	46.7
Service Wells	2	0.3
Total Wells	743	100.0
Average Depth per well	9,128	
Total Footage	6,782,433	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	3,976	49.5
Gas	58	0.8
Dry	3,992	49.7
Total	8,026	100.0

The Oil Producing Industry in OHIO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CLINTON
ROSS
HAMILTON
CLERMONT
HIGHLAND
BROWN
ADAMS

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	88
2.	Number of Counties with oil and/or gas production	68
3.	Total land area of State (acres)	26,224,000
4.	Area proved productive of oil and/or gas (acres)	2,979,826
5.	Estimated non-productive area leased January 1, 1982 (acres)	13,540,500
6.	Percent of total land area productive or leased	63.0
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 3,152,333
8.	Average field price of crude oil per barrel in 1981	$ 36.43
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 493,663
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 244,420
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 738,083
12.	Percent petroleum value to total all minerals	29.3%
13.	Principal mineral products in order of value:	
	1st	Coal
	2nd	Crude Petroleum
	3rd	Natural Gas
14.	Number of employees engaged in crude oil and natural gas production	12,413
15.	First year of production of crude oil	1860
	natural gas	1884
16.	First recorded production of crude oil (barrels) 1876	32,000
	natural gas (Mcf) 1884	800
17.	Geophysical Activity—Crew months worked in 1981	8

Production & Reserves

18.	Year of largest production (crude oil)	1896
19.	Crude oil produced in year of largest production (barrels)	23,941,000
20.	Percent of crude oil produced by stripper wells	70.0%

21.	Number of producing wells at end of 1981: Crude Oil	22,441
	Gas & Gas Distillate	18,619
	Total	41,060
22.	Average daily production of crude oil per well at end of 1981	1.5
23.	Percent of wells pumping or on artificial lift	98.0%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	30,559	0	30,559
1979	32,748	0	32,748
1980	35,322	0	35,322
1981	37,126	0	37,126

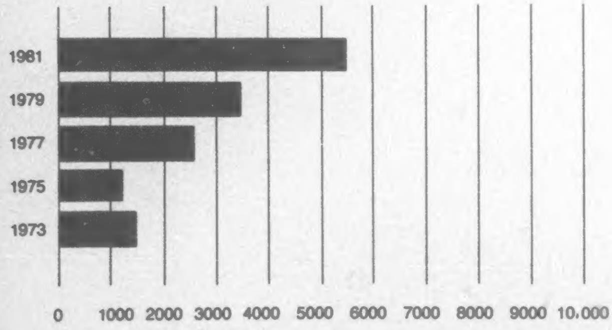
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	46	0	46	357
Estimated Production	12	0	12	137
Net Change in Reserves	34	0	34	220

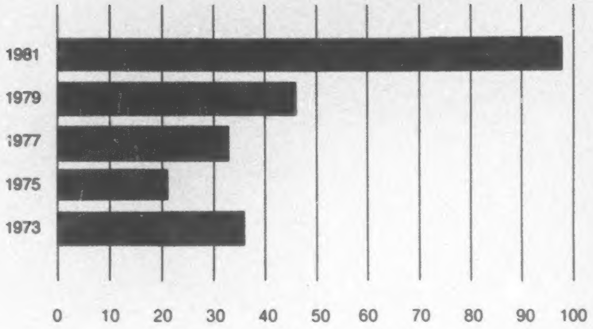
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	980	8	988	7,439
Total Production	864	8	872	5,740
Proved Reserves Dec. 31, 1980	116	0	116	1,699

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)		98
28.	Deepest producing well drilled to January 1, 1982	*Gas*	8,488
29.	Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	11,442

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	17	16.7
Gas Wells	64	62.7
Dry Wells	21	20.6
Service Wells	0	0
Total Wells	102	100.0
Average Depth per well	3,562	
Total Footage	363,304	
Development Wells		
Oil Wells	2,301	43.0
Gas Wells	2,747	51.3
Dry Wells	292	5.5
Service Wells	13	0.2
Total Wells	5,353	100.0
Average Depth per well	3,607	
Total Footage	19,307,871	
Total Wells		
Oil Wells	2,318	42.5
Gas Wells	2,811	51.5
Dry Wells	313	5.7
Service Wells	13	0.3
Total Wells	5,455	100.0
Average Depth per well	3,607	
Total Footage	19,671,175	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	65,980	46.5
Gas	40,373	28.5
Dry	35,541	25.0
Total	141,894	100.0

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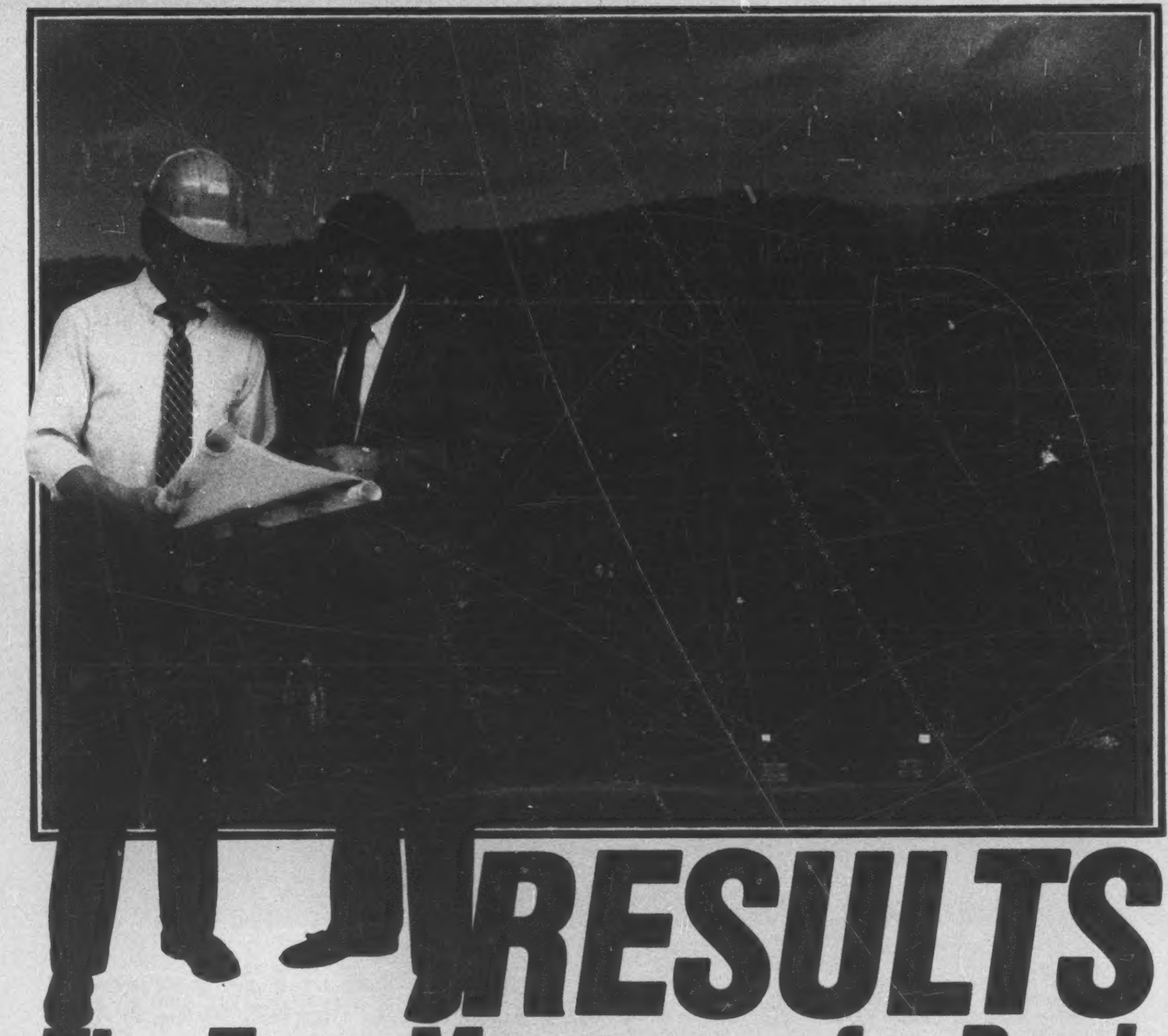

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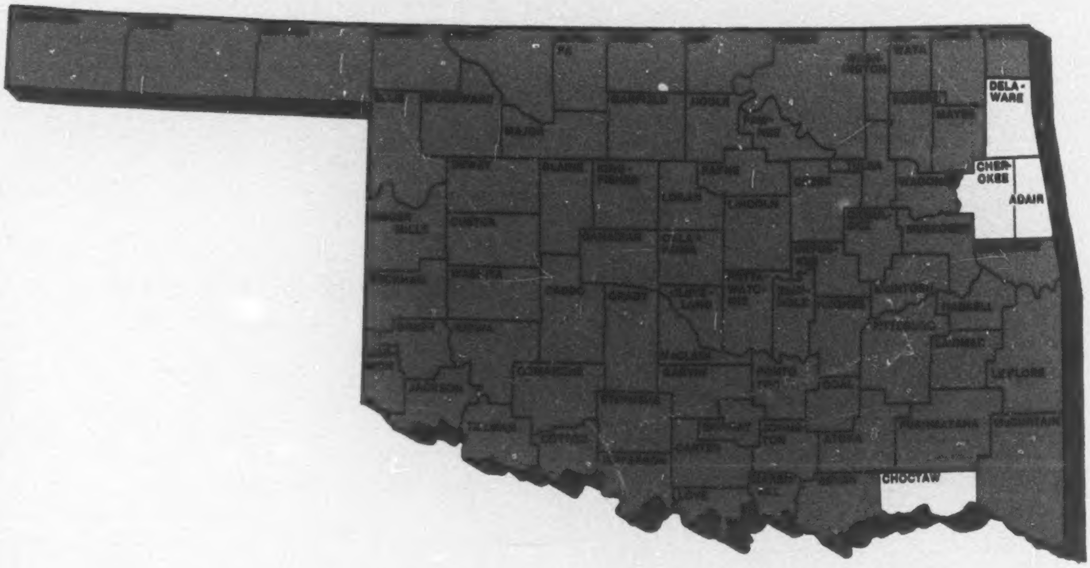
The Oil Producing Industry in OKLAHOMA



● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	77
2.	Number of Counties with oil and/or gas production	73
3.	Total land area of State (acres)	44,020,480
4.	Area proved productive of oil and/or gas (acres)	4,145,900
5.	Estimated non-productive area leased January 1, 1982 (acres)	13,256,100
6.	Percent of total land area productive or leased	39.5
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 42,361,056
8.	Average field price of crude oil per barrel in 1981	$ 35.64
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 5,490,556
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 3,835,420
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 9,325,976
12.	Percent petroleum value to total all minerals	95.3%
13.	Principal mineral products in order of value: 1st .... Crude Petroleum 2nd .... Natural Gas 3rd .... Coal	
14.	Number of employees engaged in crude oil and natural gas production	92,100
15.	First year of production of crude oil natural gas	1891 1902
16.	First recorded production of crude oil (barrels) 1891 natural gas (Mcf) 1906	30 3,520
17.	Geophysical Activity—Crew months worked in 1981	301

Production & Reserves

18.	Year of largest production (crude oil)	1927
19.	Crude oil produced in year of largest production (barrels)	277,775,000
20.	Percent of crude oil produced by stripper wells	53.3%

21. Number of producing wells at end of 1981:

Crude Oil	82,639
Gas & Gas Distillate	16,994
Total	99,633

22. Average daily production of crude oil per well at end of 1981 .... 5.1

23. Percent of wells pumping or on artificial lift 94.5%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	412,208	121,559	533,767
1979	393,540	138,082	531,622
1980	410,219	146,500*	556,719
1981	422,071	143,200*	565,217

*Estimated

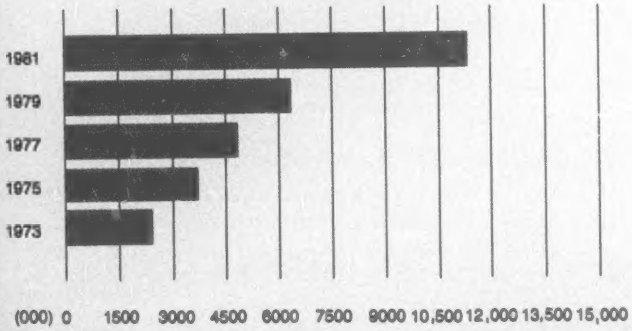
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft)
New Reserves Found	47	91	138	977
Estimated Production	131	70	201	1,614
Net Change in Reserves	-84	21	-63	-637

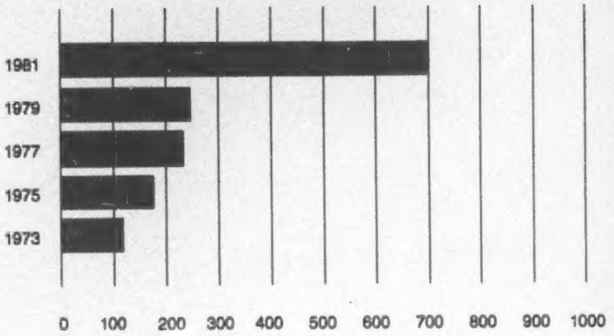
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil Cu. Ft)
Total Reserves Found	12,906	1,257	14,163	66,312
Total Production	11,976	653	12,629	52,404
Proved Reserves Dec. 31, 1980	930	604	1,534	13,908

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 698

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 24,996

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 31,441

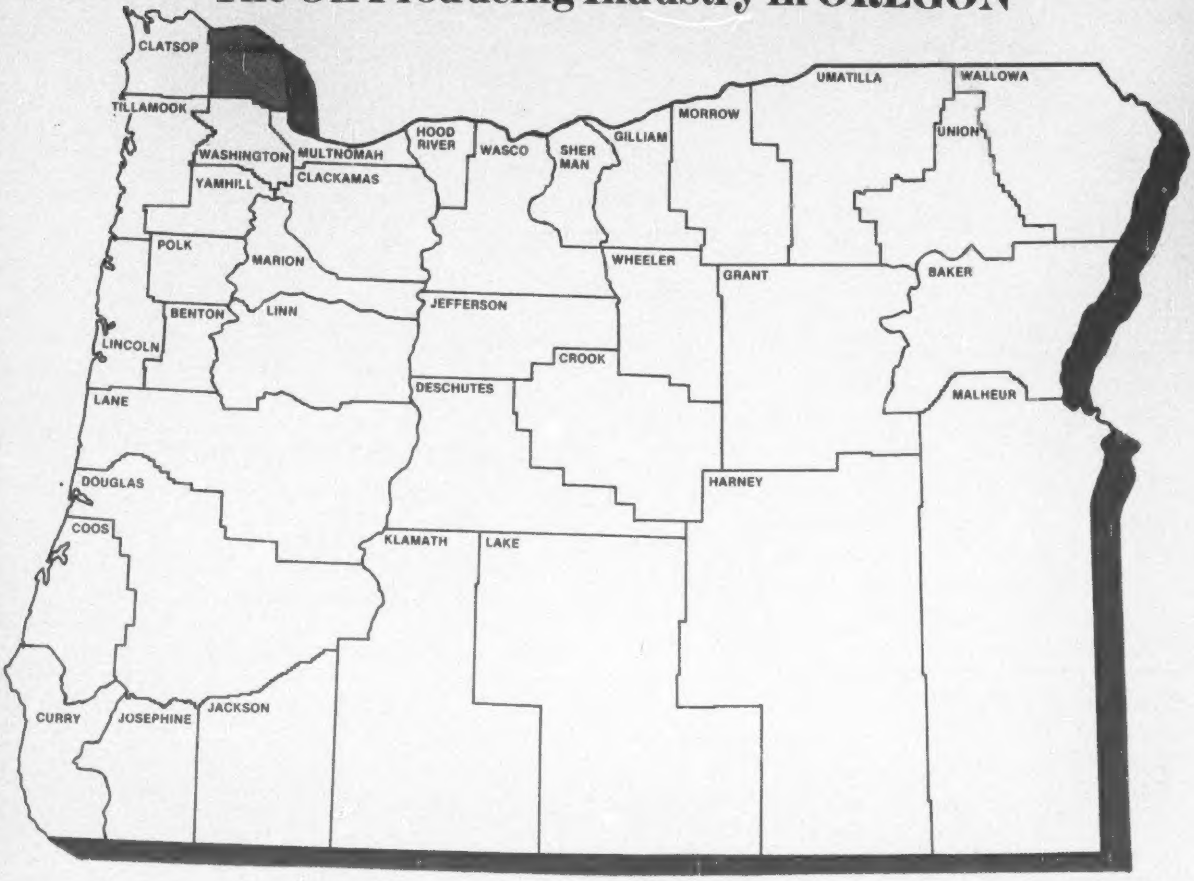
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	134	20.6
Gas Wells	113	17.4
Dry Wells	404	62.0
Service Wells	0	0
Total Wells	651	100.0
Average Depth per well	7,197	
Total Footage	4,685,481	
Development Wells		
Oil Wells	6,158	57.6
Gas Wells	2,069	19.4
Dry Wells	2,422	22.7
Service Wells	29	0.3
Total Wells	10,678	100.0
Average Depth per well	4,513	
Total Footage	48,190,358	
Total Wells		
Oil Wells	6,292	55.5
Gas Wells	2,182	19.3
Dry Wells	2,826	24.9
Service Wells	29	0.3
Total Wells	11,329	100.0
Average Depth per well	4,667	
Total Footage	52,875,839	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	208,963	60.7
Gas	36,217	10.5
Dry	98,958	28.8
Total	344,138	100.0

The Oil Producing Industry in OREGON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WHEELER
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BENTON
LINN
JEFFERSON
LINCOLN
CROOK
DESCHUTES
LANE
MALHEUR
DOUGLAS
HARNEY
COOS
KLAMATH
LAKE
CURRY
JOSEPHINE
JACKSON

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		36
2.	Number of Counties with oil and/or gas production		1
3.	Total land area of State (acres)		62,067,840
4.	Area proved productive of oil and/or gas (acres)		1,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		4,000,000
6.	Percent of total land area productive or leased		6.4
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	39
8.	Average field price of crude oil per barrel in 1981	$	—
9.	Value at wells of crude oil produced in 1981 (Thous.)		Not Applicable
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	12,775
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	12,775
12.	Percent petroleum value to total all minerals		Not Applicable
13.	Principal mineral products in order of value: 1st Crushed Stone 2nd Sand & Gravel 3rd Pumice		
14.	Number of employees engaged in crude oil and natural gas production		125
15.	First year of production of natural gas		1979
16.	First recorded production of natural gas (Mcf)	1979	15,160
17.	Geophysical Activity—Crew months worked in 1981		27

Production & Reserves

18.	Year of largest production (natural gas)	1981
19.	Natural gas produced in year of largest production (Mcf)	12,774
20.	Percent of crude oil produced by stripper wells	Not Applicable

21. Number of producing wells at end of 1981: Gas & Gas Distillate 7*

22. Average daily production of natural gas per well at end of 1981 (Mcf)..... 14*

23. Percent of wells pumping or on artificial lift .... Not Applicable

24. Average production in Mcf daily:

	Natural Gas
1978	0
1979	1*
1980	2*
1981	14*

*Estimated

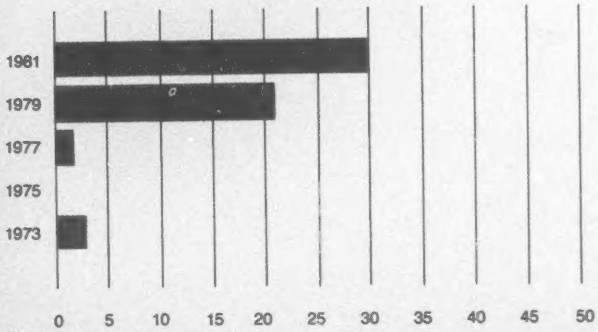
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found		Not Available		
Estimated Production				
Net Change in Reserves				

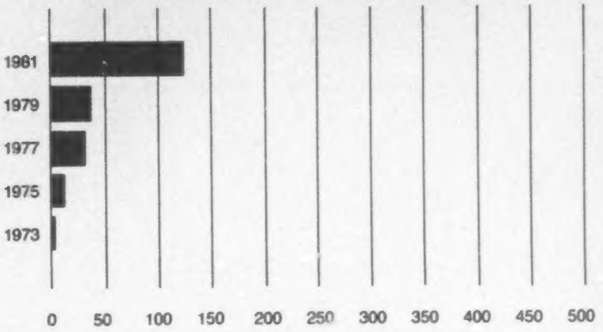
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found		Not Available		
Total Production				
Proved Reserves Dec. 31, 1980				

TOTAL WELLS DRILLED



NUMBER OF EMPLOYEES ENGAGED IN CRUDE OIL & NATURAL GAS PRODUCTION



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 2

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 3,177

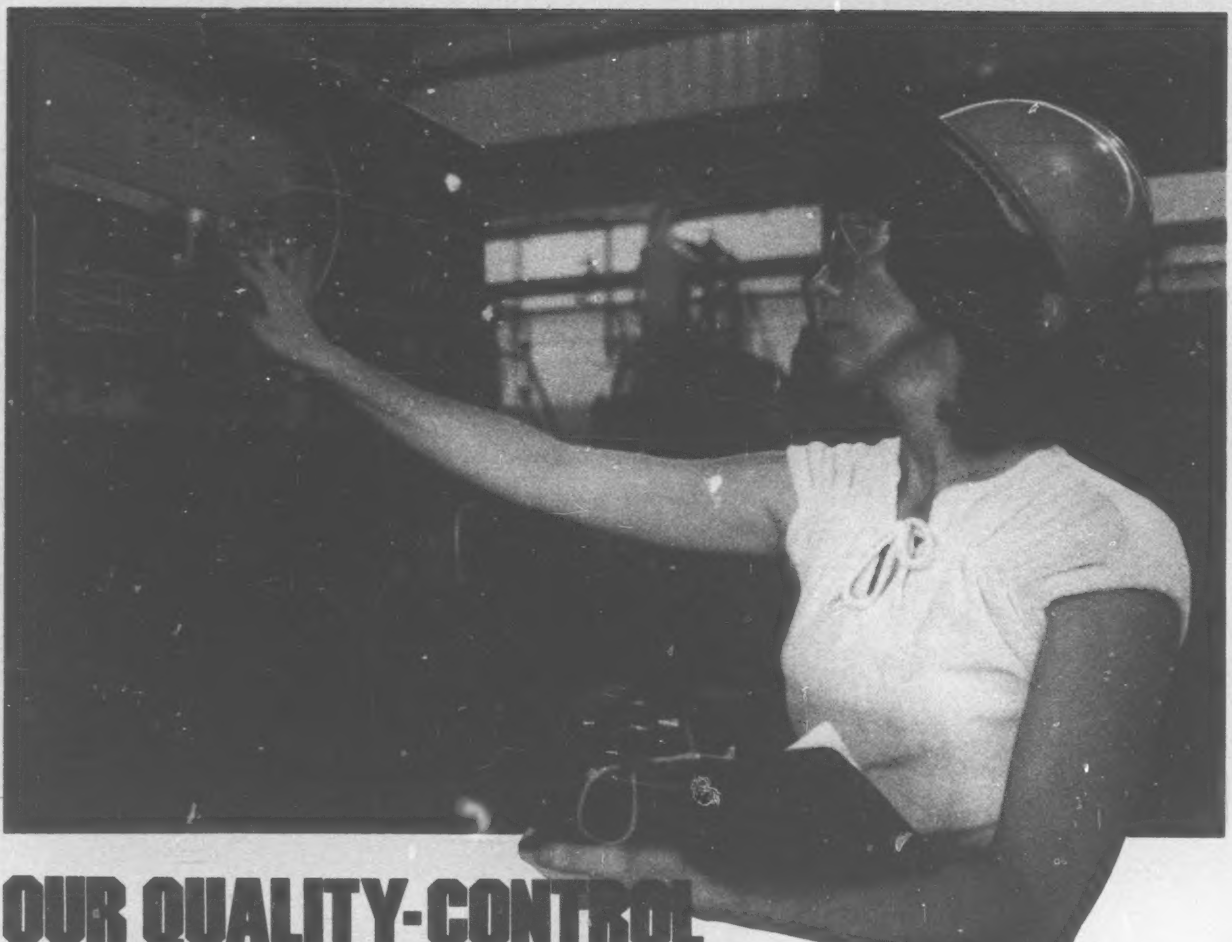
29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 13,177

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	3	10.0
Dry Wells	27	90.0
Service Wells	0	0
Total Wells	30	100.0
Average Depth per well	3,909	
Total Footage	117,297	
Development Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	0	0
Service Wells	0	0
Total Wells	0	0
Average Depth per well	0	
Total Footage	0	
Total Wells		
Oil Wells	0	0
Gas Wells	3	10.0
Dry Wells	27	90.0
Service Wells	0	0
Total Wells	30	100.0
Average Depth per well	3,909	
Total Footage	117,297	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	0	0
Gas	10	3.5
Dry	274	96.5
Total	284	100.0



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If you're going to make top quality oil country goods... you start here.

Much of the quality you need in tubular goods goes in when the steel is melted. That's why we've made major improvements at the "hot end" of our tubular production.

For instance: new desulphurization systems at our National and Lorain plants will give you steel with dramatically lower sulphur levels and exceptional notch toughness; argon stirring will give you cleaner steel; improved conditioning of blooms and tube rounds will give you

superior surface quality. And, you can expect even better results when the new continuous caster at Lorain is completed.

All this is only *part* of a major quality improvement program to make sure our oil country tubulars meet the best world-wide standards. *Every piece* of drill pipe is non-destructive tested before it leaves the mill—all *high strength* casing is tested not once, but twice—and new equipment from AMF Tuboscope, Inc., is now in place at seven strategic locations for testing casing and tubing.

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We've come through for you before—most recently by doubling our capacity for the high strength grades you need. Now, we're doing the same with quality.

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. . . and you have **freedom of phone movement** like never before! Your phone goes where you go! Take it from room to room — anywhere in your office. Take a break in the patio, pool or garden. Work way out in the garage, basement or driveway. The Interstate Phone is there at your side.

EXTENDED RANGE

Here is truly the ultimate in cordless phones. The Interstate Phone has unbelievable sound fidelity — with an extended range of up to 600 feet. The entire unit — 10.5 ounces — attaches lightly and easily to a belt, or slips into a pocket. Yet you can receive or place calls to any corner of the world.

YOU OWN IT

The Interstate Phone is wholly independent of the phone company. Even its installation. FCC registered and U.S. Government approved for direct connection to any existing phone jack. Installation and monthly charges are eliminated.

STILL MORE FEATURES

The Interstate Phone unit includes everything you need: Phone • base station • compatibility with all rotary or pushbutton systems • easy installation with standard phone jacks.

MEMORY SYSTEM

The last number called is stored in the memory and is **automatically redialed** — just push **one** button — great to reach forever busy numbers — saves redialing a string of codes.

BATTERY RECHARGING CORD

Still another Interstate Phone **exclusive!** A great new way to keep your phone charged — with no need to return it to its base unit. A **charge cord** is provided, to plug into any AC outlet in the house. Which means the base can be tucked permanently out of sight AND the phone is anywhere you want it — being charged.

GUARANTEE satisfaction is completely guaranteed! Use the Interstate Phone for 15 days in your office, or home. Not pleased? You owe nothing — not even an explanation. Just return for complete, prompt refund. Please note: Equipment used for business purposes is tax deductible. You have everything to gain, and nothing to lose (in fact, you'll wonder how you ever got along without one).

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Please send me ________ units at only $189.00 each
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U.S. Petroleum Imports by Country of Origin—1981

	Thous. B/D
From O.P.E.C. Countries:	
Algeria	311
Indonesia	366
Libya	319
Nigeria	620
Saudi Arabia	1,129
Venezuela	406
Other	172
Total O.P.E.C.	3,323
From Non-O.P.E.C. Sources	
Canada	447
Mexico	523
Netherlands Antilles	197
Trinidad & Tobago	133
Virgin Islands	327
Other	1,045
Total Non-O.P.E.C.	2,672
Total Imports:	5,995

Source: U.S. Department of Energy (Includes Imports for Strategic Petroleum Reserves)

GIANT

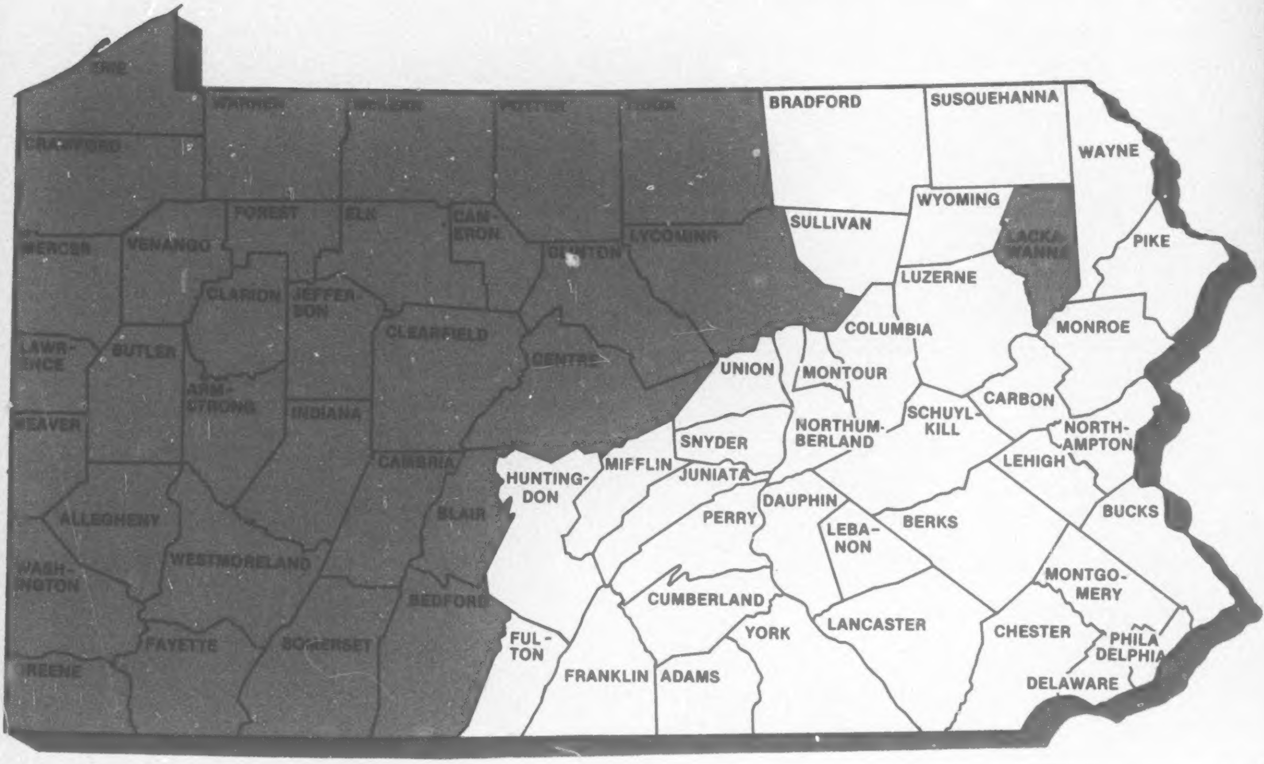
HEAVY DUTY TRUCK TARPAULINS

12x16	$23	26x40	$89
16x20	$32	26x55	$115
20x20	$36	30x60	$145
18x24	$38	50x100	$390
18x32	$50	60x120	$547
20x30	$50	60x150	$562

Before Midnight October 17

Firestone Tarp Mfg. will send any of the above truck size tarpaulins to any reader of this publication who reads and responds to this test before midnight October 17. Each tarpaulin Lot (#Z-18, PVC) is constructed of high density fabric (with virgin grade ingredient, supplied by Gulf Oil Co., Dow Chemical Co., and Union Oil Co.) with nylon reinforced rope hems, double lock stitched hems, electronically welded seams, 100% water proof, #4 (½" dia.) metal grommets set on 3 ft. centers with reinforced triangular corner patches and are recommended for all heavy duty use, and all bulk or pallet riding materials, and will be accompanied with a *LIFETIME* guarantee that it must perform 100% or it will be replaced free. Add $7 handling & crating for each tarp ordered, *Firestone Tarp Mfg.* pays all shipping. Should you wish to return your tarpaulins you may do so for a full refund. Any letter postmarked later than October 17, will be returned. LIMIT: Fifty (50) tarps per address, no exceptions. Send appropriate sum together with your name & address to: Tarp Test Dept. #572J, *Firestone Tarp Mfg., Inc.*, 6314 Santa Monica Blvd., L.A., CA. 90038, or for fastest service from any part of the country call collect, before midnight 7 days a week (213) 462-1914 (Ask Operator for) TARP TEST #572J, have credit card ready.

The Oil Producing Industry in PENNSYLVANIA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McKEAN
POTTER
TIOGA
BRADFORD
SUSQUEHANNA
WAYNE
CRAWFORD
FOREST
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CAM-ERON
LYCOMING
SULLIVAN
WYOMING
LACKA-WANNA
PIKE
MERCER
VENANGO
CLINTON
LUZERNE
CLARION
JEFFER-SON
CLEARFIELD
COLUMBIA
MONROE
LAWR-
NCE
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UNION
MONTOUR
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INDIANA
CARBON
EAVER
NORTHUM-BERLAND
SCHUYL-KILL
NORTH-AMPTON
SNYDER
CAMBRIA
LEHIGH
HUNTING-DON
MIFFLIN
JUNIATA
ALLEGHENY
BLAIR
DAUPHIN
PERRY
LEBA-NON
BERKS
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ASH-
NGTON
WESTMORELAND
MONTGO-MERY
BEDFORD
CUMBERLAND
LANCASTER
CHESTER
PHILA-DELPHIA
YORK
FAYETTE
SOMERSET
FUL-TON
REENE
FRANKLIN
ADAMS
DELAWARE

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	67
2.	Number of Counties with oil and/or gas production	32
3.	Total land area of State (acres)	28,778,240
4.	Area proved productive of oil and/or gas (acres)	2,731,500
5.	Estimated non-productive area leased January 1, 1982 (acres)	14,408,660
6.	Percent of total land area productive or leased	59.6
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 3,344,411
8.	Average field price of crude oil per barrel in 1981	$ 36.36
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 135,586
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 270,000
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 405,586
12.	Percent petroleum value to total all minerals	7.4%
13.	Principal mineral products in order of value:	
	1st ..... Coal	
	2nd ..... Portland Cement	
	3rd ..... Crushed Stone	
14.	Number of employees engaged in crude oil and natural gas production	5,061
15.	First year of production of crude oil	1859
	natural gas	1881
16.	First recorded production of crude oil (barrels) 1859	2,000
	natural gas (Mcf) 1882	600,000
17.	Geophysical Activity—Crew months worked in 1981	49

Production & Reserves

18.	Year of largest production (crude oil)	1891
19.	Crude oil produced in year of largest production (barrels)	31,424,000
20.	Percent of crude oil produced by stripper wells	100.0%

21. Number of producing wells at end of 1981:

Crude Oil	26,138
Gas & Gas Distillate	20,526
Total	46,664

22. Average daily production of crude oil per well at end of 1981 .... 0.3

23. Percent of wells pumping or on artificial lift 99.8%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	7,910	137*	8,047
1979	7,874	110*	7,984
1980	7,243	100*	7,343
1981	10,216	100*	10,316

*Estimated

25. Production and new reserves found in 1980:

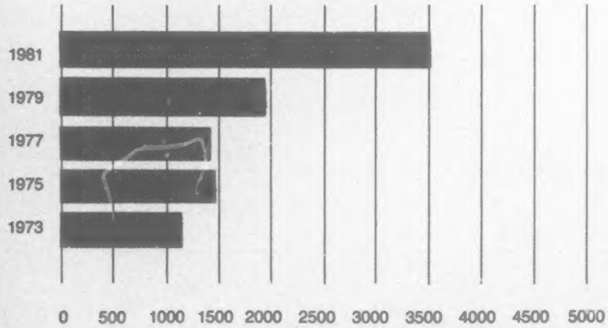
	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	4	-1**	3	-497*
Estimated Production	2	0	2	68
Net Change in Reserves	2	-1	1	-565

**Downward Revision of Previous estimate

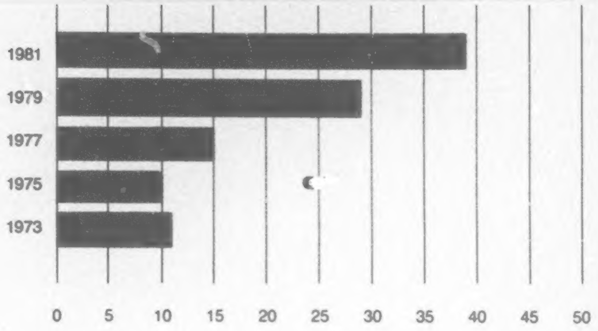
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	1,334	15	1,349	10,339
Total Production	1,299	15	1,314	9,388
Proved Reserves Dec. 31, 1980	35	0	35	951

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 39

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 11,458

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 21,460

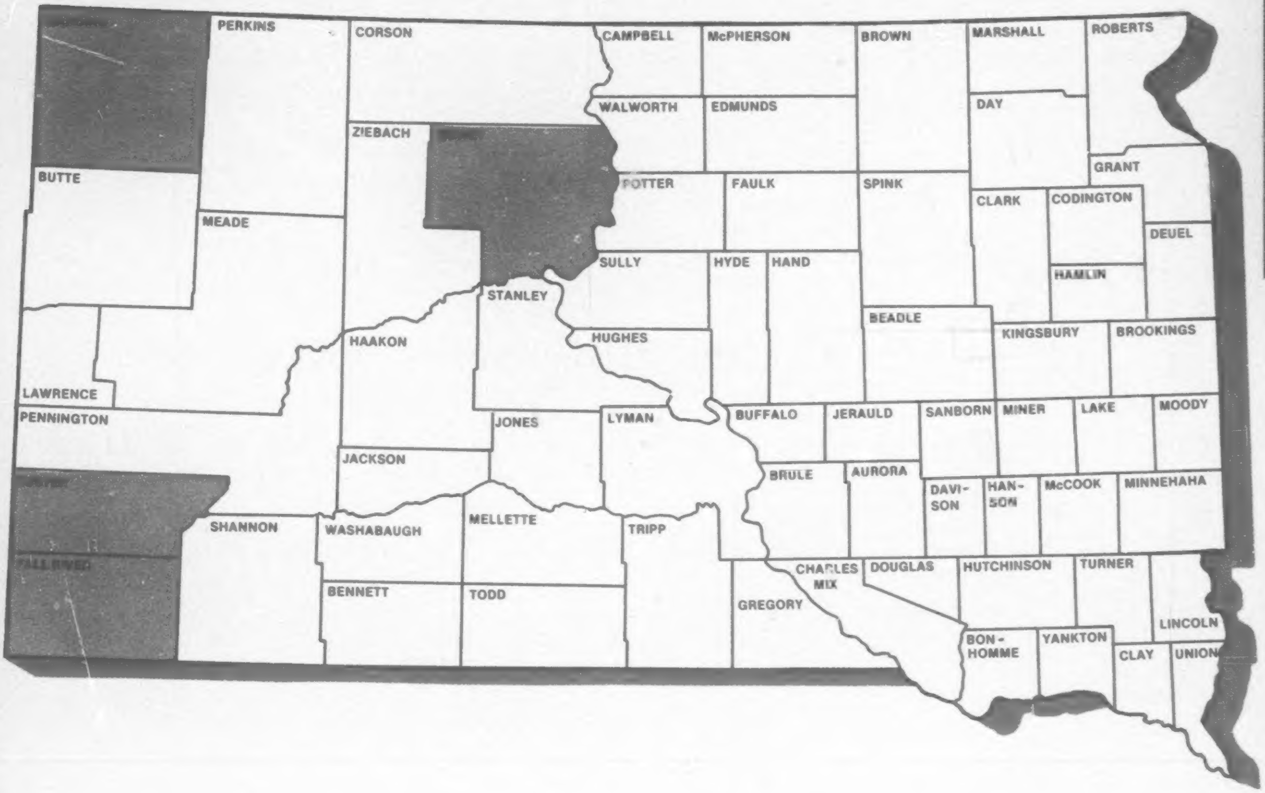
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	22	5.5
Gas Wells	359	88.6
Dry Wells	24	5.9
Service Wells	0	0
Total Wells	405	100.0
Average Depth per well	4,355	
Total Footage	1,763,754	
Development Wells		
Oil Wells	1,636	52.0
Gas Wells	1,318	41.8
Dry Wells	64	2.0
Service Wells	131	4.2
Total Wells	3,149	100.0
Average Depth per well	2,301	
Total Footage	7,246,055	
Total Wells		
Oil Wells	1,658	46.6
Gas Wells	1,677	47.2
Dry Wells	88	2.5
Service Wells	131	3.7
Total Wells	3,554	100.0
Average Depth per well	2,535	
Total Footage	9,009,809	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	243,646	79.7
Gas	23,892	7.8
Dry	38,125	12.5
Total	305,802	100.0

The Oil Producing Industry in SOUTH DAKOTA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GREGORY
LINCOLN
BON-HOMME
YANKTON
CLAY
UNION

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		67
2.	Number of Counties with oil and/or gas production		4
3.	Total land area of State (acres)		48,611,200
4.	Area proved productive of oil and/or gas (acres)		21,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		8,099,000
6.	Percent of total land area productive or leased		16.7
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	111,312
8.	Average field price of crude oil per barrel in 1981	$	35.92
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	34,950
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	–
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	34,950
12.	Percent petroleum value to total all minerals		9.8%

13.	Principal mineral products in order of value:		
	1st	Gold	
	2nd	Portland Cement	
	3rd	Crude Petroleum	
14.	Number of employees engaged in crude oil and natural gas production		155
15.	First year of production of crude oil		1953
	natural gas		1899
16.	First recorded production of crude oil (barrels)	1954	37,000
	natural gas (Mcf)	1906	22,900
17.	Geophysical Activity—Crew months worked in 1981		3

Production & Reserves

18.	Year of largest production (crude oil)	1981
19.	Crude oil produced in year of largest production (barrels)	973,000
20.	Percent of crude oil produced by stripper wells	3.3%

21. Number of producing wells at end of 1981:

Crude Oil	120
Gas & Gas Distillate	0
Total	120

22. Average daily production of crude oil per well at end of 1981 .... 17.5

23. Percent of wells pumping or on artificial lift 100.0%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	2,381	236*	2,617
1979	2,318	137*	2,455
1980	2,090	150*	2,240
1981	2,666	150*	2,816

*Estimated

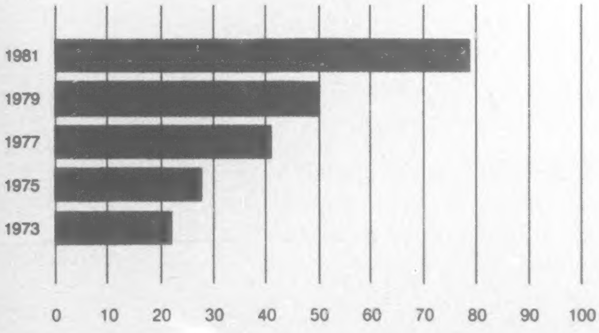
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found		Not Available		
Estimated Production				
Net Change in Reserves				

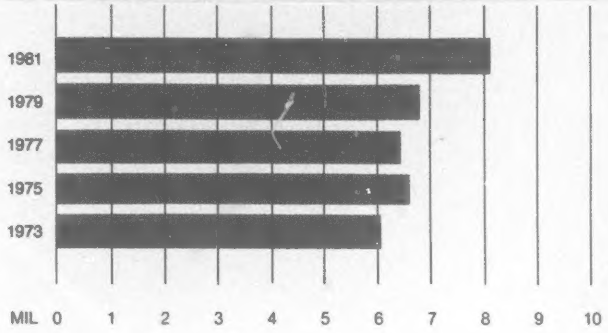
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found		Not Available		
Total Production				
Proved Reserves Dec. 31, 1980				

TOTAL WELLS DRILLED



ACREAGE UNDER LEASE FOR OIL & GAS



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 2

28. Deepest producing well drilled to January 1, 1982 .... *Oil* 9,150

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 9,771

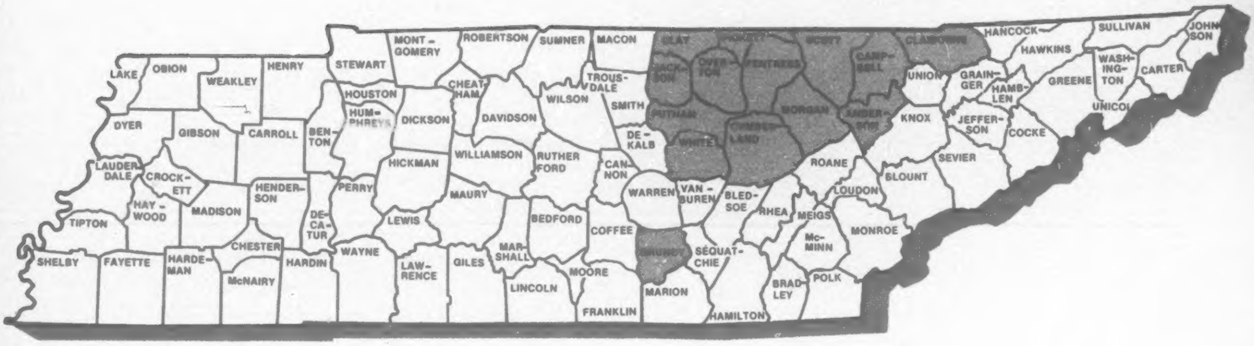
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	2	4.8
Gas Wells	4	9.5
Dry Wells	36	85.7
Service Wells	0	0
Total Wells	42	100.0
Average Depth per well	3,476	
Total Footage	145,982	
Development Wells		
Oil Wells	19	51.4
Gas Wells	14	37.8
Dry Wells	4	10.8
Service Wells	0	0
Total Wells	37	100.0
Average Depth per well	5,694	
Total Footage	210,664	
Total Wells		
Oil Wells	21	26.6
Gas Wells	18	22.8
Dry Wells	40	50.6
Service Wells	0	0
Total Wells	79	100.0
Average Depth per well	4,515	
Total Footage	356,646	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	143	16.2
Gas	37	4.2
Dry	702	79.6
Total	882	100.0

The Oil Producing Industry in TENNESSEE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BRADLEY
POLK
McMINN
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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	95
2.	Number of Counties with oil and/or gas production	14
3.	Total land area of State (acres)	26,449,920
4.	Area proved productive of oil and/or gas (acres)	27,257
5.	Estimated non-productive area leased January 1, 1982 (acres)	8,300,000
6.	Percent of total land area productive or leased	31.5
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 117,276
8.	Average field price of crude oil per barrel in 1981	$ 36.08
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 35,106
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 18,000
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 53,106
12.	Percent petroleum value to total all minerals	4.0%
13.	Principal mineral products in order of value:	
	1st ... Coal	
	2nd ... Crushed Stone	
	3rd ... Zinc	
14.	Number of employees engaged in crude oil and natural gas production	1,124
15.	First year of production of crude oil	1860
	natural gas	1889
16.	First recorded production of crude oil (barrels) ... 1916	1,000
	natural gas (Mcf) ... 1905	1
17.	Geophysical Activity—Crew months worked in 1981	34

Production & Reserves

18.	Year of largest production (crude oil)	1981
19.	Crude oil produced in year of largest production (barrels)	918,000
20.	Percent of crude oil produced by stripper wells	39.5%

21. Number of producing wells at end of 1981: Crude Oil 489
Gas & Gas Distillate 210
Total 699

22. Average daily production of crude oil per well at end of 1981 .... 3.5

23. Percent of wells pumping or on artificial lift 76.1%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	1,625	0	1,625
1979	1,682	0	1,682
1980	2,030	0	2,030
1981	2,515	0	2,515

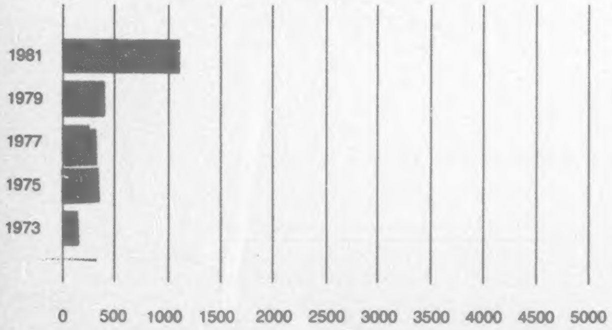
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	Not Available			
Estimated Production				
Net Change in Reserves				

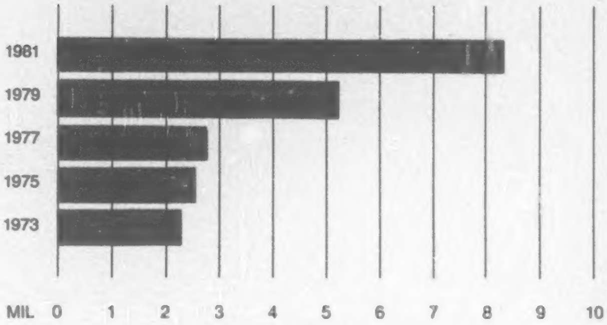
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	Not Available			
Total Production				
Proved Reserves Dec. 31, 1980				

NUMBER OF EMPLOYEES ENGAGED IN CRUDE OIL & NATURAL GAS PRODUCTION



ACREAGE UNDER LEASE FOR OIL & GAS



Exploration & Development

27. Rotary Drilling Rigs Active in 1980 (average) .... ◄1

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 3,059

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 10,748

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	47	25.0
Gas Wells	79	42.0
Dry Wells	62	33.0
Service Wells	0	0
Total Wells	188	100.0
Average Depth per well	1,770	
Total Footage	332,768	
Development Wells		
Oil Wells	65	51.2
Gas Wells	45	35.4
Dry Wells	17	13.4
Service Wells	0	0
Total Wells	127	100.0
Average Depth per well	1,549	
Total Footage	196,689	
Total Wells		
Oil Wells	112	35.6
Gas Wells	124	39.4
Dry Wells	79	25.0
Service Wells	0	0
Total Wells	315	100.0
Average Depth per well	1,681	
Total Footage	529,457	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	1,000	25.4
Gas	805	20.5
Dry	2,125	54.1
Total	3,930	100.0

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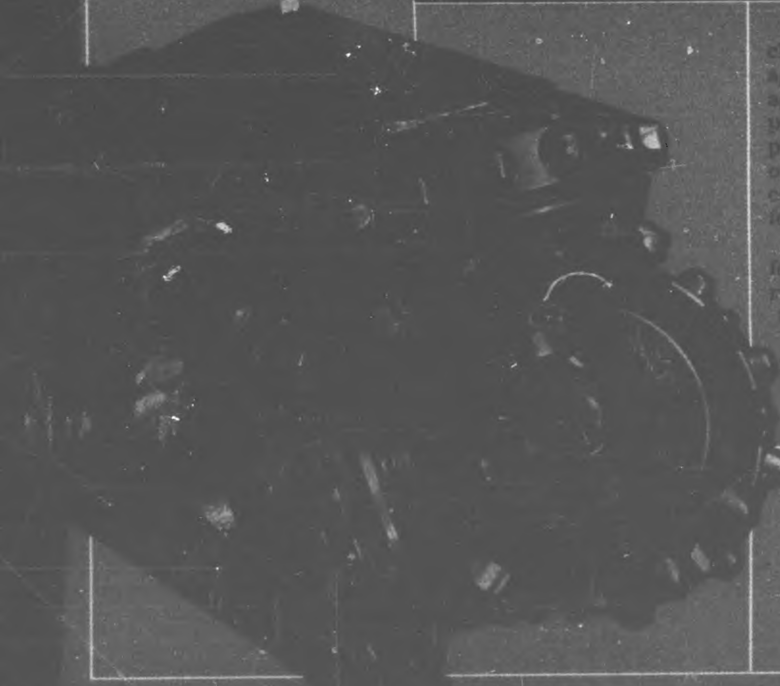
MAKING HOLE in Oklahoma with the new Hughes J22.

A field demonstration of how Hughes' new scooped teeth can improve your penetration rate and cost-per-foot.

124 runs in north-central Oklahoma demonstrated recently the effectiveness of a totally new carbide tooth design that increases your penetration rate and thus decreases your drilling cost-per-foot.

A direct comparison.

Bit records from 55 runs using Hughes J22 bits with the new, patented, scoop-shaped teeth were compared to a series of 69 runs of J22s with chisel-shaped teeth. The result was an impressive 19% faster average penetration rate for the new design, and an equally impressive 15% reduction in cost-per-foot.



The 69 J22 runs with chisel-shaped teeth averaged 2,750 feet at an average 113.4 hours each, for a penetration rate of 24.2 feet per hour and a cost-per-foot of $10.67. Field veterans considered this good performance for the area.

In the same range of formations, however, the 55 runs with scoop-shaped teeth averaged 3,136 feet and 10[illegible] hours. This represents 28.8 feet per hour and a cost-per-foot of $9.24. Operators got 386 more feet per bit, faster penetration and a savings of $1.63 per foot.

A new design

The reason is simple: scoop-shaped, carbide teeth. Hughes engineers researched the idea and came up with a new design that has a concave surface leading, a convex surface trailing. The leading cutting tip meets the formation more squarely and tends to lift cuttings mechanically. The trailing flank adds strength. Because stress is distributed more evenly, breakage is reduced. And so is your cost-per-foot.

The design of a concave surface leading a convex surface substantially increases the strength of Hughes' new, patented, scoop-tooth design. Field performance in Oklahoma has indicated reductions as high as 15% in drilling cost-per-foot with J22 bits.

Hughes has constantly worked toward improving rock bit performance since the company developed the first successful rotary rock bit in 1909. For more information on scoop-shaped carbide teeth and other recent innovations, contact your Hughes field representative. He has the knowledge, data and technological resources to work with you in developing an optimum drilling program for your particular situation.

Or write to Hughes Tool Division, P.O. Box 2539, Houston, Texas 77001.

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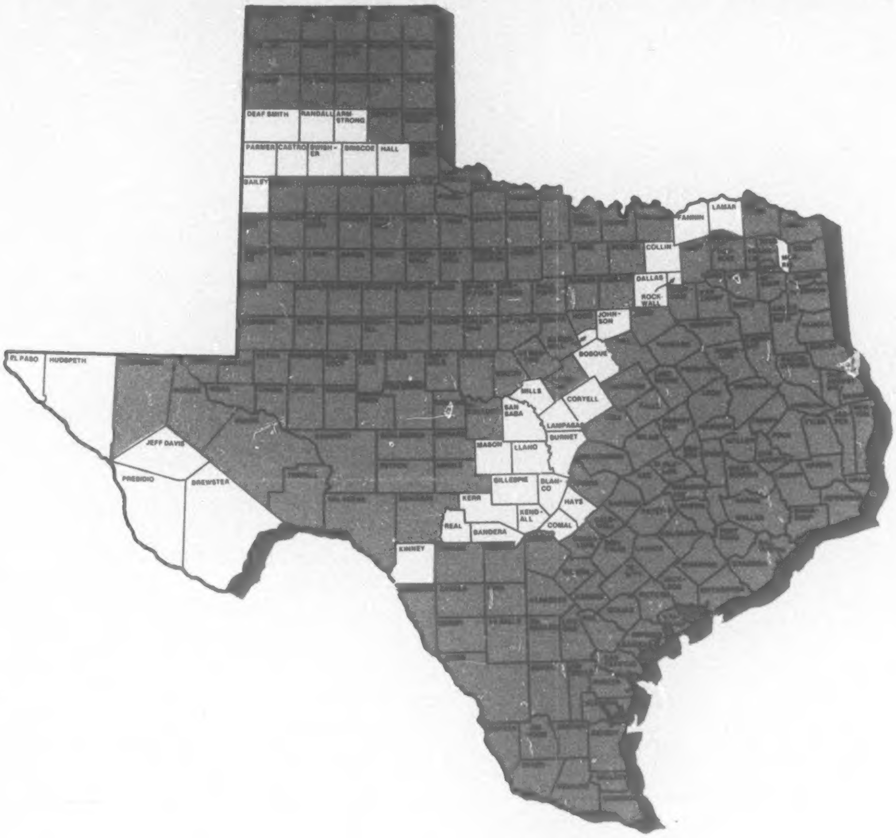
The Oil Producing Industry in TEXAS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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	254
2.	Number of Counties with oil and/or gas production	215
3.	Total land area of State (acres)	167,765,760
4.	Area proved productive of oil and/or gas (acres)	11,750,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	52,600,000
6.	Percent of total land area productive or leased	38.4
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$206,772,773
8.	Average field price of crude oil per barrel in 1981	$ 35.34
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 33,631,770
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 13,945,410
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 47,577,180
12.	Percent petroleum value to total all minerals	94.3%
13.	Principal mineral products in order of value:	
	1st .... Crude Petroleum	
	2nd .... Natural Gas	
	3rd .... Portland Cement	
14.	Number of employees engaged in crude oil and natural gas production	278,896
15.	First year of production of crude oil	1889
	natural gas	1889
16.	First recorded production of crude oil (barrels) 1890	48
	natural gas (Mcf) 1906	1,000
17.	Geophysical Activity—Crew months worked in 1981	1,745

Production & Reserves

18.	Year of largest production (crude oil)	1972
19.	Crude oil produced in year of largest production (barrels)	1,301,154,000
20.	Percent of crude oil produced by stripper wells	14.5%

21.	Number of producing wells at end of 1981: Crude Oil	180,627
	Gas & Gas Distillate	39,575
	Total	220,202
22.	Average daily production of crude oil per well at end of 1981	14.4
23.	Percent of wells pumping or on artificial lift	90.4%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	2,942,603	728,208	3,670,811
1979	2,789,299	690,685*	3,479,984
1980	2,670,590	690,900*	3,361,490
1981	2,607,296	706,000*	3,313,296

*Estimated

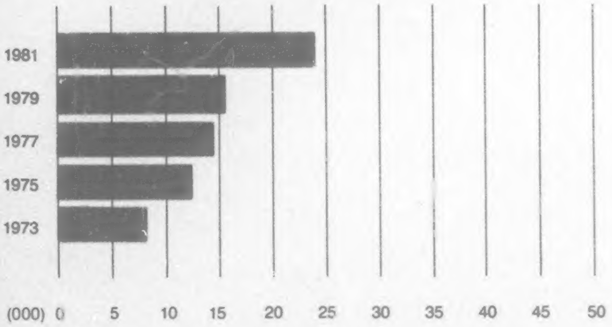
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	859	274	1,133	4,004
Estimated Production	937	304	1,241	6,861
Net Change in Reserves	-78	-30	-108	-2,857

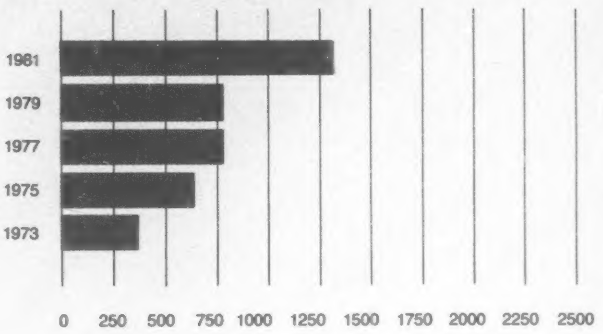
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	61,312	11,898	73,210	283,024
Total Production	53,106	9,446	62,552	229,854
Proved Reserves Dec. 31, 1980	8,206	2,452	10,658	53,170

TOTAL WELLS DRILLED



RCTARY RIGS ACTIVE



Exploration & Development

27.	Rotary Drilling Rigs Active in 1981 (average)	1,317
28.	Deepest producing well drilled to January 1, 1982 *Gas*	26,518
29.	Deepest well drilled to January 1, 1982 (feet) *Dry Hole*	29,650

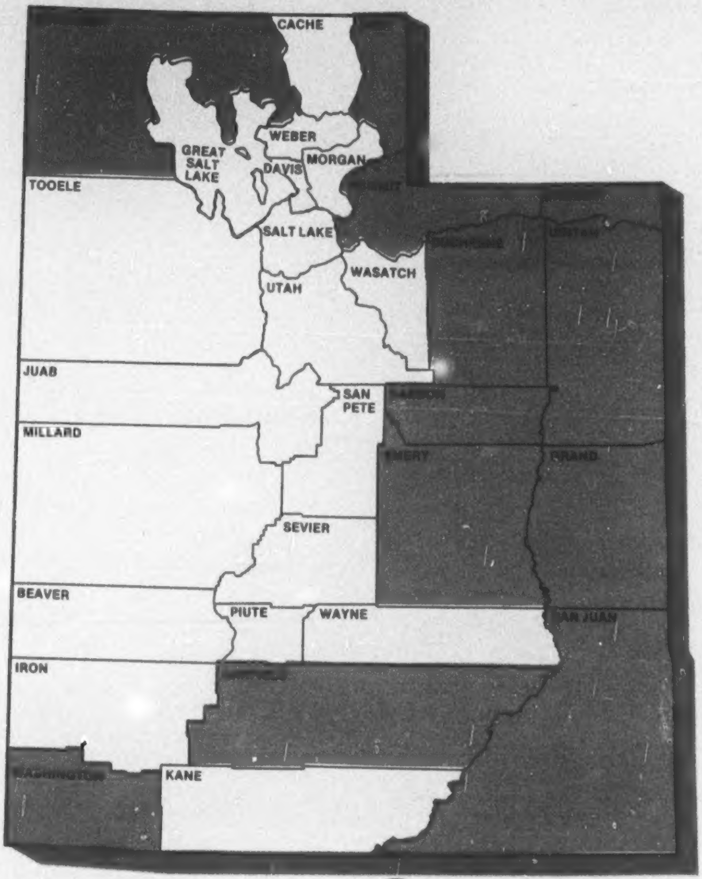
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	692	13.6
Gas Wells	923	18.1
Dry Wells	3,487	68.3
Service Wells	0	0
Total Wells	5,102	100.0
Average Depth per well	6,454	
Total Footage	32,930,282	
Development Wells		
Oil Wells	12,360	65.6
Gas Wells	2,884	15.3
Dry Wells	3,224	17.1
Service Wells	370	2.0
Total Wells	18,838	100.0
Average Depth per well	4,878	
Total Footage	91,894,197	
Total Wells		
Oil Wells	13,052	54.5
Gas Wells	3,807	15.9
Dry Wells	6,711	28.0
Service Wells	370	1.6
Total Wells	23,940	100.0
Average Depth per well	5,214	
Total Footage	124,824,479	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	431,165	59.0
Gas	59,452	8.1
Dry	240,705	32.9
Total	731,322	100.0

The Oil Producing Industry in UTAH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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		29
2.	Number of Counties with oil and/or gas production		12
3.	Total land area of State (acres)		52,541,440
4.	Area proved productive of oil and/or gas (acres)*		364,000
5.	Estimated non-productive area leased January 1, 1982 (acres)		30,536,000
6.	Percent of total land area productive or leased		58.8
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	4,466,728
8.	Average field price of crude oil per barrel in 1981	$	34.30
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	813,356
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	103,625
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	916,981
12.	Percent petroleum value to total all minerals		35.0%

13. Principal mineral products in order of value:
    - 1st .... Crude Petroleum
    - 2nd .... Copper
    - 3rd .... Coal

14.	Number of employees engaged in crude oil and natural gas production		5,915
15.	First year of production of crude oil		1907
	natural gas		1886
16.	First recorded production of crude oil (barrels)	1924	3,000
	natural gas (Mcf)	1927	927
17.	Geophysical Activity—Crew months worked in 1981		122

Production & Reserves

18.	Year of largest production (crude oil)	1975
19.	Crude oil produced in year of largest production (barrels)	42,301,000
20.	Percent of crude oil produced by stripper wells	0.8%

21. Number of producing wells at end of 1981:

Crude Oil	1,543
Gas & Gas Distillate	226
Total	1,769

22. Average daily production of crude oil per well at end of 1981 . . . . 50.0

23. Percent of wells pumping or on artificial lift 72.8%

24. Average production in barrels daily:

	Crude Oil	Natural Gas Liquids	Total Petroleum Liquids
1978	85,940	7,267*	93,207
1979	75,967	7,945*	88,912
1980	68,246	8,000*	76,246
1981	64,967	9,000*	73,967

*Estimated

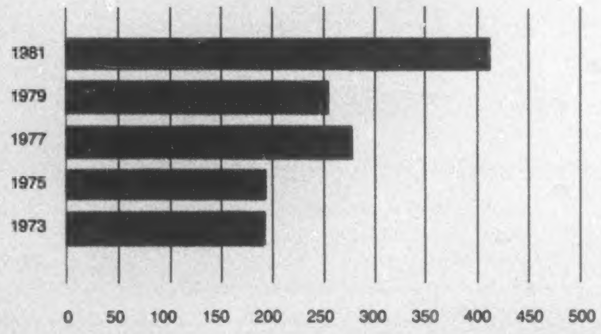
25. Production and new reserves found in 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
New Reserves Found	22	71	93	332
Estimated Production	25	3	28	65
Net Change in Reserves	−3	68	65	267

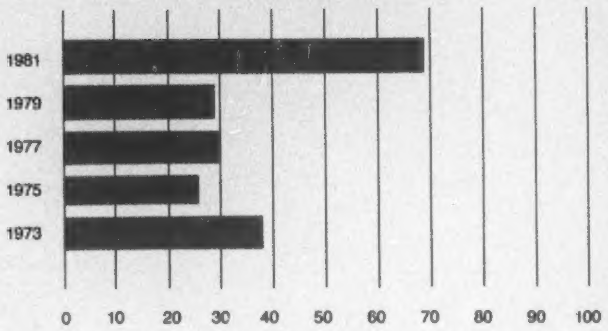
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	Natural Gas Liquids (Million Barrels)	Total Liquids Petroleum	Natural Gas (Bil. Cu. Ft.)
Total Reserves Found	901	182	1,083	2,722
Total Production	703	55	758	1,438
Proved Reserves Dec. 31, 1980	198	127	325	1,284

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 69

28. Deepest producing well drilled to January 1, 1982 . . . . *Oil* 17,732

29. Deepest well drilled to January 1, 1982 (feet) . . . . *Dry Hole* 21,845

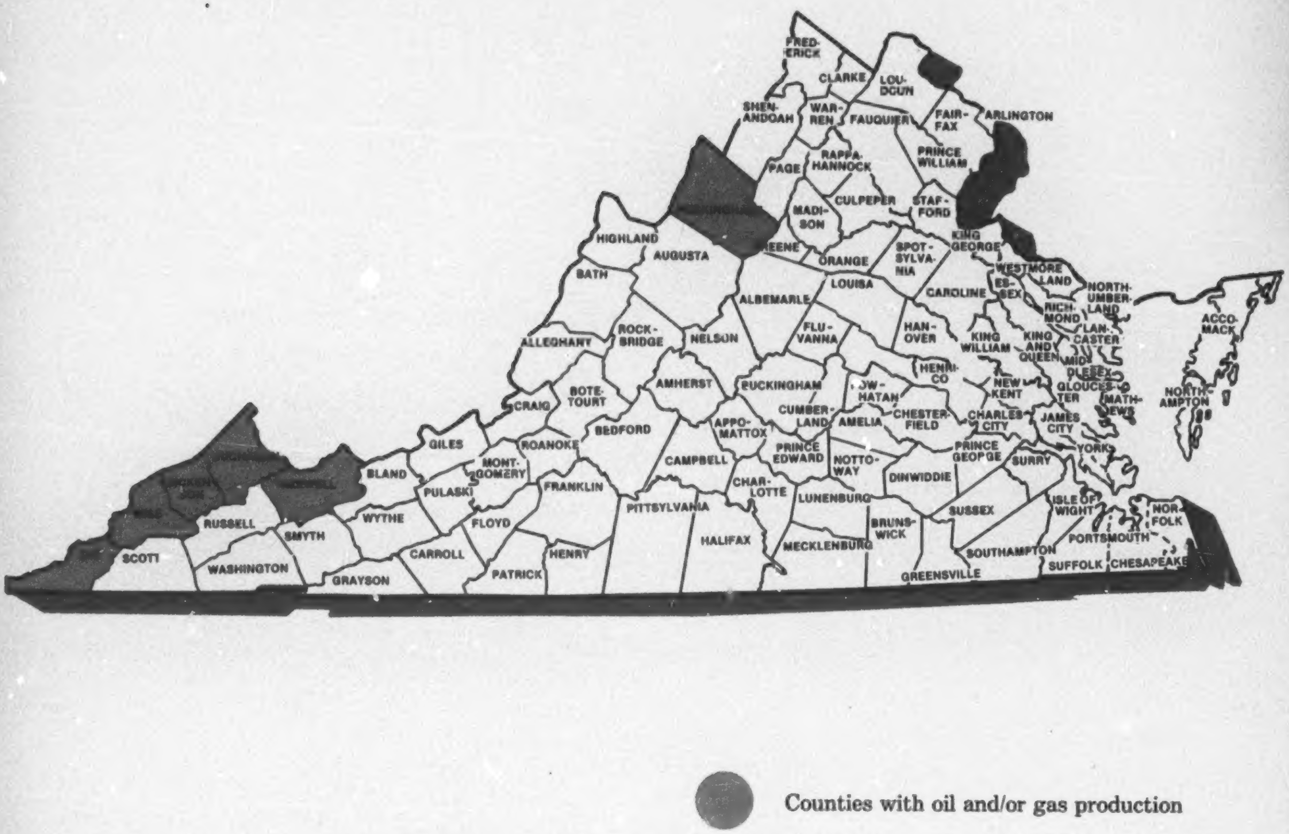
30. Wells and footage drilled in 1981:

	Number	Percent
Wildcat Wells		
Oil Wells	26	15.0
Gas Wells	27	15.6
Dry Wells	120	69.4
Service Wells	0	0
Total Wells	173	100.0
Average Depth per well	6,691	
Total Footage	1,157,592	
Development Wells		
Oil Wells	121	48.8
Gas Wells	89	35.9
Dry Wells	36	14.5
Service Wells	2	0.8
Total Wells	248	100.0
Average Depth per well	6,199	
Total Footage	1,537,324	
Total Wells		
Oil Wells	147	34.9
Gas Wells	116	27.5
Dry Wells	156	37.1
Service Wells	2	0.5
Total Wells	421	100.0
Average Depth per well	6,401	
Total Footage	2,694,916	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	Percent
Oil	2,482	38.8
Gas	893	13.9
Dry	3,025	47.3
Total	6,400	100.0

The Oil Producing Industry in VIRGINIA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● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties		96
2.	Number of Counties with oil and/or gas production		6
3.	Total land area of State (acres)		25,459,200
4.	Area proved productive of oil and/or gas (acres)		90,555
5.	Estimated non-productive area leased January 1, 1982 (acres)		3,366,385
6.	Percent of total land area productive or leased		13.6
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$	1,923
8.	Average field price of crude oil per barrel in 1981	$	36.25
9.	Value at wells of crude oil produced in 1981 (Thous.)	$	471
10.	Value at wells of natural gas produced in 1981 (Thous.)	$	22,800
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$	23,271
12.	Percent petroleum value to total all minerals		1.0%

13.	Principal mineral products in order of value:	
	1st .... Coal	
	2nd .... Crushed Stone	
	3rd .... Lime	
14.	Number of employees engaged in crude oil and natural gas production	300
15.	First year of production of crude oil	1943
	natural gas	1931
16.	First recorded production of crude oil (barrels) 1943	2,000
	natural gas (Mcf) 1949	80,000
17.	Geophysical Activity—Crew months worked in 1981	31

Production & Reserves

18.	Year of largest production (crude oil)	1947
19.	Crude oil produced in year of largest production (barrels)	61,000
20.	Percent of crude oil produced by stripper wells	95.1%

21. Number of producing wells at end of 1981: Crude Oil 0
Gas & Gas Distillate 274
Total 274

22. Average daily production of crude oil per well at end of 1981............. Not Applicable

23. Percent of wells pumping or on artificial lift .... Not Applicable

24. Average production in barrels daily:

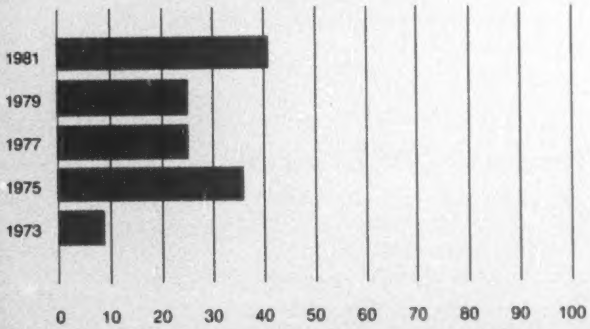
	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	5	0	5
1979	4	0	4
1980	27	0	27
1981	36	0	36

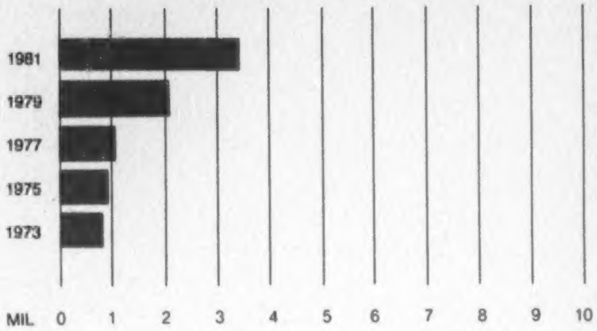
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found		Not Available		
Estimated Production				
Net Change in Reserves				

26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found		Not Available		
Total Production				
Proved Reserves Dec. 31, 1980				


TOTAL WELLS DRILLED


ACREAGE UNDER LEASE FOR OIL & GAS

Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average) 3

28. Deepest producing well drilled to January 1, 1982 .... *Gas* 7,238

29. Deepest well drilled to January 1, 1982 (feet) .... *Dry Hole* 17,003

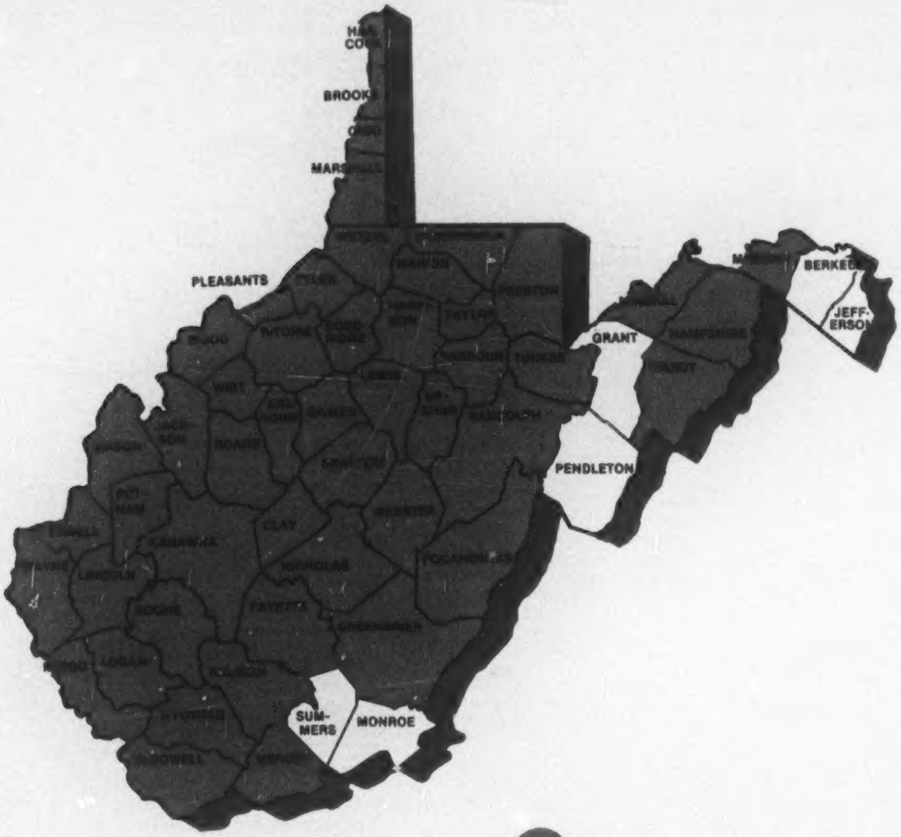
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	0	0
Gas Wells	0	0
Dry Wells	3	100.0
Service Wells	0	0
Total Wells	3	100.0
Average Depth per well	6,823	
Total Footage	20,470	
Development Wells		
Oil Wells	5	13.2
Gas Wells	29	76.3
Dry Wells	4	10.5
Service Wells	0	0
Total Wells	38	100.0
Average Depth per well	4,346	
Total Footage	165,148	
Total Wells		
Oil Wells	5	12.2
Gas Wells	29	70.7
Dry Wells	7	17.1
Service Wells	0	0
Total Wells	41	100.0
Average Depth per well	4,527	
Total Footage	185,618	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	21	5.2
Gas	293	72.5
Dry	90	22.3
Total	404	100.0

The Oil Producing Industry in WEST VIRGINIA


BROOKE
OHIO
MARSHALL
WETZEL
MARION
PRESTON
PLEASANTS
TYLER
WOOD
RITCHIE
DODDRIDGE
HARRISON
TAYLOR
BARBOUR
TUCKER
GRANT
MINERAL
HAMPSHIRE
HARDY
MORGAN
BERKELEY
JEFFERSON
WIRT
CALHOUN
GILMER
LEWIS
UPSHUR
RANDOLPH
JACKSON
ROANE
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CABELL
WAYNE
KANAWHA
CLAY
WEBSTER
LINCOLN
NICHOLAS
POCAHONTAS
BOONE
FAYETTE
GREENBRIER
MINGO
LOGAN
RALEIGH
WYOMING
SUMMERS
MONROE
McDOWELL
MERCER

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	55
2.	Number of Counties with oil and/or gas production	49
3.	Total land area of State (acres)	15,404,800
4.	Area proved productive of oil and/or gas (acres)	7,325,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	6,809,000
6.	Percent of total land area productive or leased	91.8
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 1,553,697
8.	Average field price of crude oil per barrel in 1981	$ 36.63
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 127,216
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 497,645
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 624,861
12.	Percent petroleum value to total all minerals	6.4%

13. Principal mineral products in order of value:
    1st .... Coal
    2nd .... Natural Gas
    3rd .... Crude Petroleum

14.	Number of employees engaged in crude oil and natural gas production		13
15.	First year of production of crude oil		1860
	natural gas		1885
16.	First recorded production of crude oil (barrels)	1876	120,000
	natural gas (Mcf)	1885	450,000
17.	Geophysical Activity—Crew months worked in 1981		23

Production & Reserves

18.	Year of largest production (crude oil)	1,900
19.	Crude oil produced in year of largest production (barrels)	16,196,000
20.	Percent of crude oil produced by stripper wells	99.0%

21. Number of producing wells at end of

1981: Crude Oil	14,700
Gas & Gas Distillate	26,925
Total	41,625

22. Average daily production of crude oil per well at end of 1981	0.5
23. Percent of wells pumping or on artificial lift	100.0%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	6,526	21,559*	28,085
1979	6,592	15,068*	21,660
1980	6,383	16,500*	22,883
1981	9,515	16,500*	26,015

*Estimated

25. Production and new reserves found in 1980:

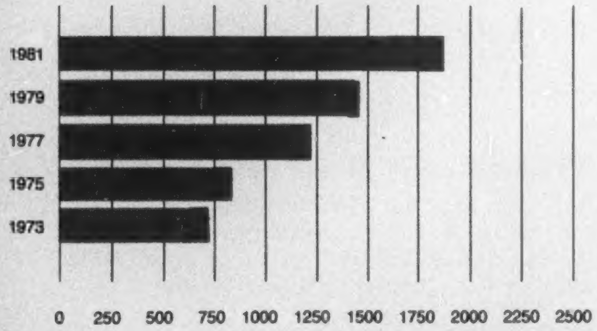
	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	−16**	29	13	1,050
Estimated Production	2	6	8	160
Net Change in Reserves	−18	23	5	890

**Downward Revision of Previous Estimate

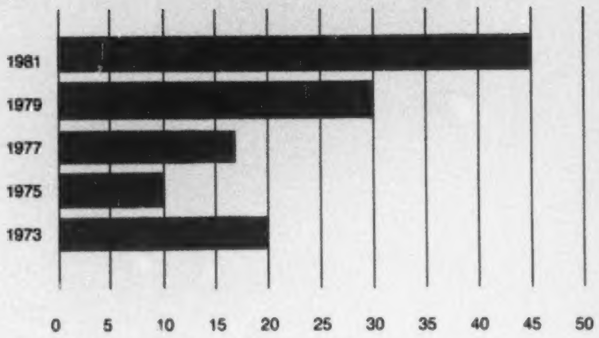
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	557	335	892	17,896
Total Production	527	238	765	15,337
Proved Reserves Dec. 31, 1980	30	97	127	2,559

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average)		45
28. Deepest producing well drilled to January 1, 1982	*Gas*	14,300
29. Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	20,222

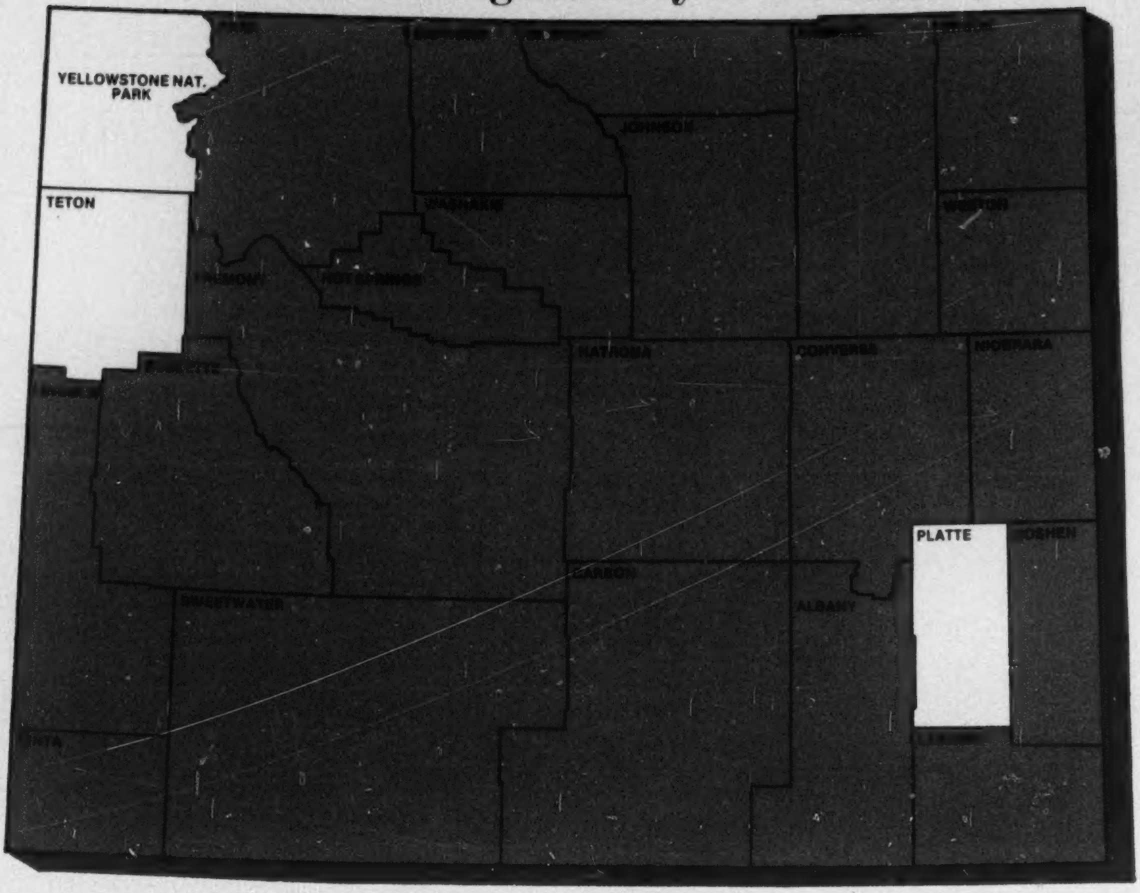
30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	6	3.9
Gas Wells	109	70.3
Dry Wells	40	25.8
Service Wells	0	0
Total Wells	155	100.0
Average Depth per well	4,516	
Total Footage	700,051	
Development Wells		
Oil Wells	181	10.5
Gas Wells	1,347	78.0
Dry Wells	140	8.1
Service Wells	59	3.4
Total Wells	1,727	100.0
Average Depth per well	3,928	
Total Footage	6,782,905	
Total Wells		
Oil Wells	187	9.9
Gas Wells	1,456	77.4
Dry Wells	180	9.6
Service Wells	59	3.1
Total Wells	1,882	100.0
Average Depth per well	3,976	
Total Footage	7,482,956	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	46,718	44.4
Gas	39,247	37.3
Dry	19,218	18.3
Total	105,183	100.0

The Oil Producing Industry in WYOMING


YELLOWSTONE NAT. PARK
TETON
JOHNSON
WASHAKIE
WESTON
FREMONT
HOT SPRINGS
SUBLETTE
NATRONA
CONVERSE
NIOBRARA
PLATTE
GOSHEN
CARBON
ALBANY
SWEETWATER
UINTA

● Counties with oil and/or gas production

Extent & Economic Value of Industry

1.	Number of Counties	23
2.	Number of Counties with oil and/or gas production	20
3.	Total land area of State (acres)	162,209,920
4.	Area proved productive of oil and/or gas (acres)	2,300,000
5.	Estimated non-productive area leased January 1, 1982 (acres)	34,550,000
6.	Percent of total land area productive or leased	59.2
7.	Value at wells of crude oil produced all time to January 1, 1982 (Thous.)	$ 21,835,668
8.	Average field price of crude oil per barrel in 1981	$ 32.49
9.	Value at wells of crude oil produced in 1981 (Thous.)	$ 3,969,433
10.	Value at wells of natural gas produced in 1981 (Thous.)	$ 1,234,350
11.	Total value of crude oil and natural gas in 1981 (Thous.)	$ 5,203,783
12.	Percent petroleum value to total all minerals	76.5%

13. Principal mineral products in order of value:
    - 1st .... Crude Petroleum
    - 2nd .... Natural Gas
    - 3rd .... Coal

14.	Number of employees engaged in crude oil and natural gas production		22,008
15.	First year of production of crude oil		1867
	natural gas		1889
16.	First recorded production of crude oil (barrels)	1894	2,000
	natural gas (Mcf)	1906	100
17.	Geophysical Activity—Crew months worked in 1981		317

Production & Reserves

18.	Year of largest production (crude oil)	1970
19.	Crude oil produced in year of largest production (barrels)	160,345,000
20.	Percent of crude oil produced by stripper wells	4.2%

21. Number of producing wells at end of

1981: Crude Oil	11,574
Gas & Gas Distillate	1,888
Total	13,462

22. Average daily production of crude oil per well at end of 1981	31.1
23. Percent of wells pumping or on artificial lift	92.8%

24. Average production in barrels daily:

	Crude Oil	*Natural Gas Liquids*	*Total Petroleum Liquids*
1978	376,397	25,323	401,720
1979	361,342	28,493*	389,835
1980	345,251	28,500*	373,751
1981	334,723	31,600*	366,323

*Estimated

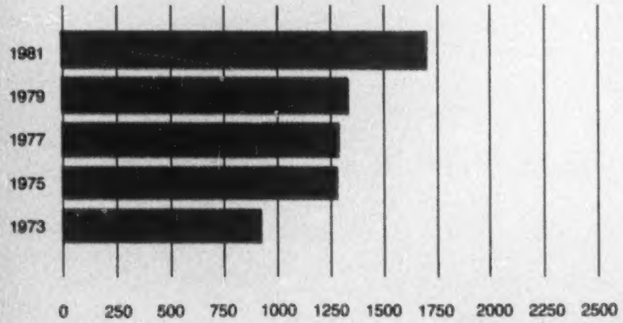
25. Production and new reserves found in 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
New Reserves Found	212	72	284	2,009
Estimated Production	125	16	141	430
Net Change in Reserves	87	56	143	1,579

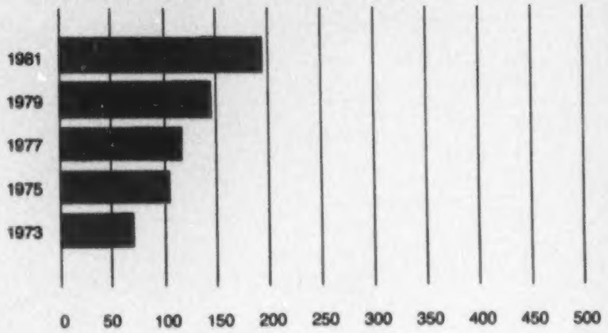
26. Production and new reserves found all time to December 31, 1980:

	Crude Oil	*Natural Gas Liquids (Million Barrels)*	*Total Liquids Petroleum*	*Natural Gas (Bil. Cu. Ft.)*
Total Reserves Found	5,614	595	6,209	18,525
Total Production	4,686	254	4,940	9,112
Proved Reserves Dec. 31, 1980	928	341	1,269	9,413

TOTAL WELLS DRILLED



ROTARY RIGS ACTIVE



Exploration & Development

27. Rotary Drilling Rigs Active in 1981 (average)		191
28. Deepest producing well drilled to January 1, 1982	*Gas*	19,610
29. Deepest well drilled to January 1, 1982 (feet)	*Dry Hole*	25,764

30. Wells and footage drilled in 1981:

	Number	*Percent*
Wildcat Wells		
Oil Wells	80	13.9
Gas Wells	41	7.1
Dry Wells	454	79.0
Service Wells	0	0
Total Wells	575	100.0
Average Depth per well	7,959	
Total Footage	4,576,405	
Development Wells		
Oil Wells	653	57.8
Gas Wells	172	15.2
Dry Wells	273	24.2
Service Wells	32	2.8
Total Wells	1,130	100.0
Average Depth per well	6,670	
Total Footage	7,537,549	
Total Wells		
Oil Wells	733	43.0
Gas Wells	213	12.5
Dry Wells	727	42.6
Service Wells	32	1.9
Total Wells	1,705	100.0
Average Depth per well	7,105	
Total Footage	12,113,954	

31. Total wells drilled all time to January 1, 1982 (Excluding service wells):

	Number	*Percent*
Oil	22,523	51.9
Gas	2,979	6.9
Dry	17,877	41.2
Total	43,379	100.0

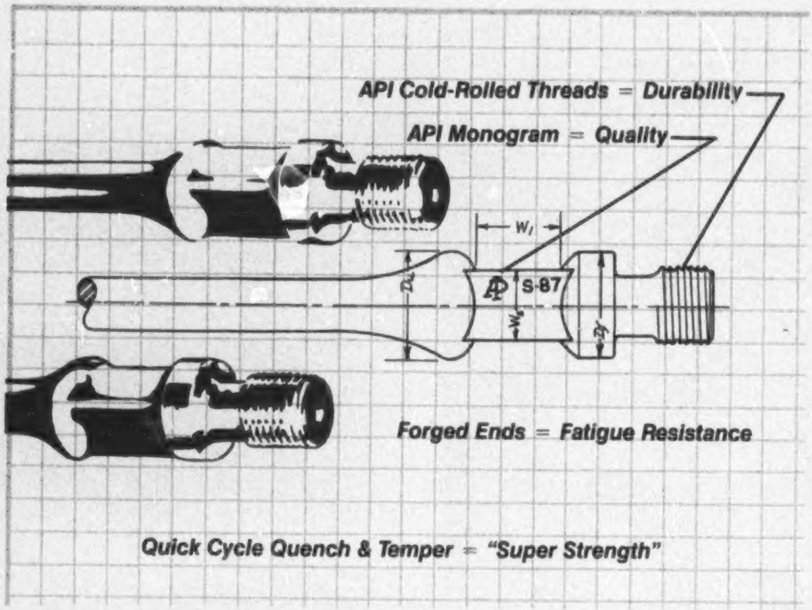
U.S. Drilling Costs — 1980

	Oil Wells	Gas Wells	Dry Holes	Total Wells
Wells Drilled	28,553	15,225	18,233	62,011
Footage Drilled (000)	117,066	85,820	93,145	296,031
Total Cost (millions)	$ 7,768	$ 8,167	$ 6,865	$ 22,800
Average Depth (feet)	4,099	5,636	5,108	4,773
Average Cost per Well	$272,070	$536,402	$376,525	$367,682
Average Cost per Foot	$ 66.36	$ 95.16	$ 73.70	$ 77.02

Note: Includes all costs incurred through "Christmastree."
Source: Joint Association Survey

State & Local Severance And Production Taxes Paid In 1981

Alabama	$ 55,757,124
Alaska	1,170,090,000
Arkansas	27,047,104
California	10,248,781
Colorado	18,010,500
Florida	95,240,320
Indiana	1,835,038
Kansas	717,708
Kentucky	12,543,912
Louisiana	803,146,950
Maryland	3,154
Michigan	77,105,018
Mississippi	108,145,167
Montana	29,782,765
Nebraska	4,776,112
Nevada	3,488
New Mexico	369,331,199
North Dakota	71,212,304
Ohio	1,731,210
Oklahoma	601,846,204
South Dakota	1,270,099
Tennessee	530,106
Texas	2,204,602,015
Utah	16,040,549
West Virginia	31,007,930
Wyoming	269,100,000
Total U.S.	**$5,981,124,757**



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U.S. Petroleum Demand

	Petroleum demand (Thous. B/D)			% U.S. energy consump.		
Year	Domestic	Export	Total	Liquid petroleum	Natural gas (dry)	Total
1975	16,335	209	16,544	46.3	28.2	74.5
1976	17,476	223	17,699	47.2	27.3	74.5
1977	18,447	243	18,690	48.7	26.1	74.8
1978	18,862	362	19,224	48.6	25.6	74.2
1979	18,531	471	19,002	47.2	26.0	73.2
1980	17,020	541	17,561	44.9	26.8	71.7
1981	16,000	595	16,595	43.3	27.0	70.3

Source: U.S. Department of Energy

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U.S. Energy Consumption

	Total	Oil & Gas	Percent Oil & Gas
	Quadrillion BTU's		
1947	33.0	15.9	48.2
1948	33.2	17.0	51.2
1949	31.4	17.4	55.4
1950	33.9	19.6	57.9
1951	36.7	22.1	60.2
1952	36.4	23.1	63.4
1953	37.5	24.3	64.7
1954	36.2	24.7	68.2
1955	39.7	26.8	67.4
1956	41.7	28.5	68.3
1957	41.7	29.0	69.5
1958	41.7	30.2	72.4
1959	43.1	31.7	72.9
1960	44.5	32.8	73.7
1961	45.3	33.7	73.9
1962	47.4	35.4	74.1
1963	49.3	36.8	74.0
1964	51.2	38.0	73.8
1965	53.3	39.3	73.8
1966	56.4	41.8	74.1
1967	58.2	43.6	74.8
1968	61.7	46.6	75.5
1969	64.9	49.4	76.1
1970	67.1	51.6	76.8
1971	68.3	53.0	77.6
1972	71.6	55.7	77.8
1973	74.6	57.3	76.8
1974	72.8	55.2	75.8
1975	70.7	52.7	74.5
1976	74.5	55.5	74.5
1977	76.3	57.1	74.8
1978	78.2	58.0	74.2
1979	78.9	57.8	73.3
1980	75.9	54.6	71.9
1981	73.9	51.9	70.2

Source: U.S. Department of Energy

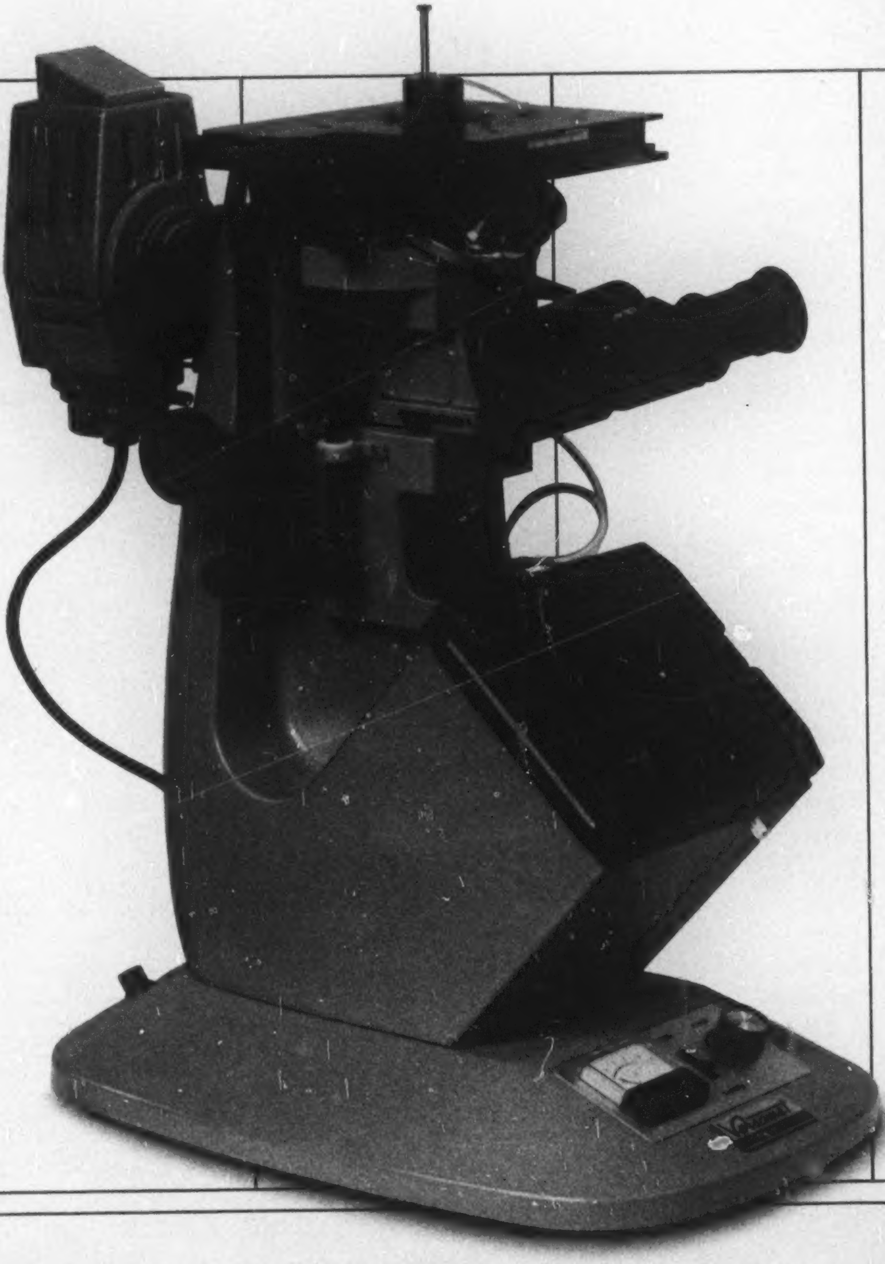
Geophysical Activity in The U.S.—1972-1981
Crew Months Worked

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Atlantic Coast	0	21	8	112	66	34	17	4	20	40
Florida	148	153	76	55	22	17	18	17	21	42
New York	22	28	8	14	15	12	2	2	11	7
Pennsylvania	105	64	44	32	26	21	41	33	39	49
Virginia	5	1	8	0	3	0	4	17	24	31
West Virginia	52	56	45	32	13	8	11	15	24	23
Other	20	20	17	5	5	2	9	3	15	9
P.A.D. Dist. I	**352**	**343**	**206**	**250**	**150**	**94**	**102**	**91**	**154**	**201**
Illinois	62	72	67	23	5	4	3	10	5	9
Indiana	19	18	10	1	1	0	0	0	6	N.R.
Kansas	20	16	34	24	36	28	64	88	76	65
Kentucky	21	50	65	31	11	7	1	7	23	12
Michigan	175	232	201	267	266	180	244	111	145	268
Nebraska	7	7	0	1	3	5	2	24	12	17
North Dakota	56	41	72	34	44	96	269	269	242	239
Ohio	16	17	9	2	2	3	2	1	3	8
Oklahoma	220	128	153	151	90	103	234	240	169	301
South Dakota	6	8	30	8	0	1	63	3	2	8
Other	4	14	14	14	7	10	8	37	37	0
P.A.D. Dist. II	**606**	**603**	**655**	**556**	**465**	**437**	**890**	**790**	**720**	**922**
Alabama	136	73	74	97	81	13	32	50	126	156
Arkansas	49	46	48	25	32	45	48	35	37	67
Louisiana	388	315	357	377	347	318	560	665	654	501
Mississippi	310	176	76	160	163	199	173	154	168	175
New Mexico	98	94	133	74	79	53	89	85	120	136
Texas	606	686	989	929	942	722	1,095	1,213	1,438	1,745
P.A.D. Dist. III	**1,587**	**1,390**	**1,677**	**1,662**	**1,644**	**1,350**	**1,997**	**2,202**	**2,543**	**2,780**
Colorado	72	69	76	37	53	42	61	58	87	56
Montana	73	62	155	40	85	57	155	135	202	388
Utah	64	51	89	65	65	71	163	106	158	122
Wyoming	126	264	363	353	239	183	211	366	274	317
Other	40	3	3	1	17	24	34	28	20	18
P.A.D. Dist IV	**375**	**449**	**686**	**496**	**459**	**377**	**624**	**693**	**741**	**901**
Alaska	84	64	184	176	129	34	16	30	37	82
Arizona	24	2	0	10	0	1	8	54	35	33
California	81	139	236	135	138	65	119	122	157	192
Nevada	16	9	16	16	11	38	45	51	47	41
Other	15	0	0	1	0	30	44	4	10	5
P.A.D. Dist. V	**220**	**214**	**436**	**338**	**278**	**168**	**232**	**261**	**286**	**353**
Undesignated*	—	—	—	114	144	637	303	363	518	264
Total U.S.	**3,140**	**2,999**	**3,660**	**3,416**	**3,140**	**3,063**	**4,148**	**4,400**	**4,962**	**5,421**

*Undesignated includes marine crew months worked.
N.R. = None Reported

Source: Society of Exploration Geophysicists.

ERLANGER
TUBULAR WORKS



There's No Secret To Rigorous Quality Control

At Erlanger Tubular Works, we have one purpose. Be a tubular finishing company that provides a dependable supply of reliable casing and tubing. And we make no secret about how we intend to fulfill this purpose. Apply the industry's most rigorous quality control program to our finishing process.

We Do Everything We Can To Disqualify Our Own Tubulars.

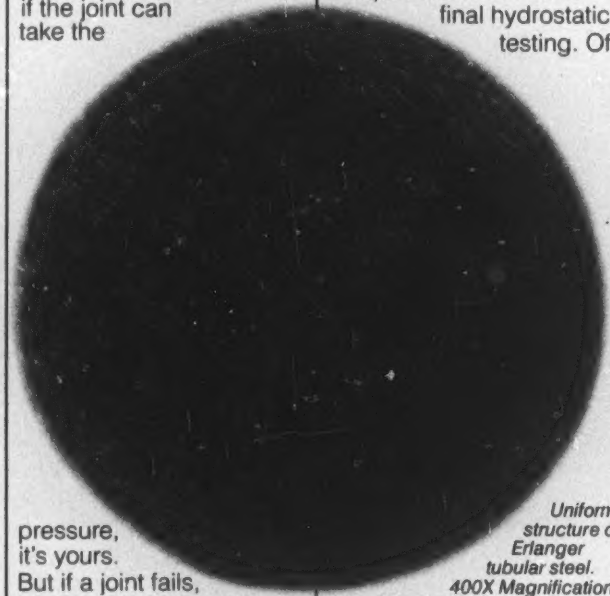
We begin with the finest raw tubulars available and do everything we can to eliminate them. So you won't have to.

After heat treating, we cut samples and pull them apart to determine tensile strength. Then we identify the steel's chemical fingerprint. We know exactly what each tubular is made of. Plus, we verify the steel's uniform structure, through the wall, using a powerful microscope.

We Must First Convince Ourselves That The Tubular Can Take Your Pressures.

We continue testing by checking wall thickness, especially in the final

THERE'S NO SECRET TO RIGOROUS QUALITY CONTROL



Uniform structure of Erlanger tubular steel. 400X Magnification.

twenty inches at each end of the joint. We scan the tubular electromagnetically to catch any deadly, invisible flaws.

Then we put the pressure to each joint on our specially designed hydrostatic test stand. And if the joint can take the pressure, it's yours. But if a joint fails, we paint it, crush the ends, and unload it for scrap.

Third Party Testing Verifies Erlanger Quality.

Every joint of high strength casing and tubing is evaluated by a third party inspection service. Before it leaves our yard. So, independent tests back our claim to quality.

Our Testing Documents Are No Secret Either.

We document every single test on every single joint. From heat-treating temperature records to final hydrostatic testing. Of course, the documents are available for your review.

But Quality Is Only As Good As Availability.

Erlanger has the financial muscle to keep casing and tubing on hand. High-strength tubulars, as well as carbon grades.

Plus, we have the plant flexibility to give you 24-hour turnaround on most orders. And we're located at the heart of production: The Tulsa Port of Catoosa. So, our quality isn't limited by availability. It's enhanced.

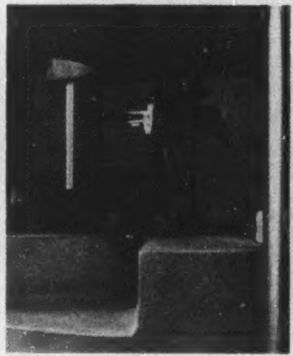
We Finish A Full Range Of API Sizes And Grades.

We finish seamless tubulars in every API size from 2⅜ through 13⅜ inches. Plus, we produce strengths through P110.

Because it's no secret that you simply need quality tubulars. And Erlanger has them. Call us today. Use our **24-hour toll-free number: 1-800-228-6672.** Or, in Texas, call collect: (713) 974-3022.

Houston Sales Office
5858 Westheimer,
Suite 604
Houston, Texas 77057
(713) 974-3022
TWX 9108814837

Dallas Sales Office
The Registry
6350 LBJ Freeway, Suite 1
Dallas, Texas 75240
(214) 458-8778



Steel specimen in tensile strength test stand.

Oklahoma City Sales Office
Timbergate Office Park
6161 North May Avenue
Suite 200-P
Oklahoma City,
Oklahoma 73112
(405) 848-5861

Tulsa Sales Office
421 Mayo Building
Tulsa, Oklahoma 74103
(918) 584-5596

Plant
5610 Bird Creek Avenue
Catoosa, Oklahoma
74015
(918) 266-3970
TWX 9108403042

WE BEGIN WITH EXCELLENCE AND FINISH WITH PERFECTION

Estimated Productive and Nonproductive Acreage Under Lease for Oil and Gas 1980-1982

	Total Land Area of State (Acres)	*Total Acres Under Lease—Jan. 1st.*			*Percent of Total Land Area Under Lease — Jan. 1 1982*
		1980	*1981*	*1982*	
Florida	34,617,600	2,805,200	3,005,200	3,715,000	10.7
Maryland	6,330,240	364,200	449,200	494,200	7.8
New York	30,611,840	4,975,000	5,500,000	5,710,000	18.7
Pennsylvania	28,778,240	16,631,660	17,010,160	17,140,160	59.6
Virginia	25,459,200	2,023,745	3,053,150	3,456,940	13.6
West Virginia	15,404,800	13,542,000	13,934,000	14,134,000	91.8
P.A.D. Dist. I	**141,201,920**	**40,341,805**	**42,951,710**	**44,650,300**	**31.6**
Illinois	35,678,720	3,904,720	4,413,000	4,673,000	13.1
Indiana	23,102,080	3,725,340	8,778,810	8,832,960	38.2
Kansas	52,343,680	12,984,300	13,222,400	13,794,900	26.4
Kentucky	25,376,000	4,083,000	4,950,000	5,225,000	20.6
Michigan	36,362,880	10,784,891	12,550,000	14,074,000	38.7
Missouri	44,156,800	502,060	504,030	612,298	1.4
Nebraska	48,949,120	10,548,000	12,584,000	12,570,000	25.7
North Dakota	44,334,720	22,752,000	22,299,000	22,920,000	51.7
Ohio	26,224,000	15,428,607	16,527,377	16,520,376	63.0
Oklahoma	44,020,480	16,082,700	16,886,900	17,402,000	39.5
South Dakota	48,611,200	6,820,600	7,457,500	8,120,000	16.7
Tennessee	26,449,920	5,245,352	6,522,160	8,327,257	31.5
P.A.D. Dist. II	**455,609,600**	**112,681,570**	**126,695,177**	**133,071,791**	**29.2**
Alabama	32,453,120	7,351,786	8,985,085	9,186,076	28.3
Arkansas	33,244,800	7,982,000	9,132,700	10,140,960	30.5
Louisiana	28,755,200	14,767,000	15,962,000	16,100,000	56.0
Mississippi	30,269,440	7,951,400	7,951,400	11,926,500	39.4
New Mexico	77,703,680	29,350,000	30,130,000	30,020,000	38.6
Texas	167,765,760	51,669,600	60,074,600	64,350,000	38.4
P.A.D. Dist. III	**370,192,000**	**119,071,786**	**132,235,785**	**141,723,536**	**38.3**
Colorado	66,410,240	34,747,000	31,809,000	30,639,000	46.1
Montana	93,175,680	34,110,000	36,060,000	38,170,000	41.0
Utah	52,541,440	28,890,800	29,519,000	30,900,000	58.8
Wyoming	62,209,920	39,597,000	38,765,000	36,850,000	59.2
P.A.D. Dist. IV	**274,337,280**	**137,344,800**	**136,153,000**	**136,559,000**	**49.8**
Alaska	362,516,480	3,744,476	3,527,540	4,131,340	1.1
Arizona	72,586,880	11,945,400	12,005,400	20,146,200	27.8
California	100,071,040	4,040,276	4,106,000	5,055,461	5.1
Nevada	70,328,960	15,718,800	17,855,800	23,554,000	33.5
Oregon	62,067,840	4,500,700	4,001,120	4,001,000	6.4
P.A.D. Dist. V	**667,571,200**	**39,949,652**	**41,495,860**	**56,888,001**	**8.5**
Miscellaneous	354,675,200	**	**	**	**
TOTAL U.S.	**2,263,587,200**	**449,389,613**	**479,531,532**	**512,892,628**	**22.7**

** Not Available

Source: Various state and industry sources.

Rotary Rigs Active in The United States—1972-1981

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Florida	18	9	9	9	5	6	6	5	4	8
New York	1	2	7	8	9	7	7	9	7	12
Pennsylvania	8	11	14	10	10	15	25	29	29	39
West Virginia	17	20	16	10	12	17	27	30	38	45
Other	2	2	2	2	1	2	6	7	1	6
P.A.D. Dist I	**46**	**44**	**48**	**39**	**37**	**47**	**71**	**80**	**79**	**110**
Illinois	14	6	7	19	22	16	28	13	25	45
Indiana	2	0	1	2	2	3	4	0	0	1
Kansas	25	28	44	57	51	68	76	66	120	197
Kentucky	2	2	2	1	1	2	3	1	2	5
Michigan	18	19	24	28	24	24	24	25	31	37
Nebraska	6	4	7	9	8	9	10	9	14	15
North Dakota	7	10	12	17	19	24	39	56	83	119
Ohio	23	36	30	21	26	33	47	46	74	98
Oklahoma	91	115	146	178	186	233	258	245	397	698
South Dakota	1	1	1	1	2	3	2	1	2	2
Other	2	1	1	2	0	1	1	0	3	1
P.A.D. Dist II	**191**	**222**	**275**	**335**	**341**	**416**	**492**	**462**	**751**	**1,218**
Alabama	15	13	12	14	17	13	13	13	11	15
Arkansas	15	15	18	14	15	15	14	10	27	34
Louisiana	216	205	203	227	231	292	338	347	427	456
Mississippi	37	29	29	25	32	42	45	40	58	72
New Mexico	57	62	79	71	54	69	76	88	118	135
Texas	325	376	508	637	653	779	855	770	987	1,317
P.A.D. Dist III	**665**	**700**	**849**	**988**	**1,002**	**1,210**	**1,341**	**1,268**	**1,628**	**2,029**
Colorado	36	42	46	43	38	45	41	40	61	82
Montana	20	19	24	27	28	27	30	33	49	82
Utah	34	38	42	26	19	30	32	29	42	69
Wyoming	62	70	107	107	86	118	136	147	155	191
Other	0	1	0	<1	0	1	3	2	3	3
P.A.D. Dist IV	**152**	**170**	**219**	**203**	**171**	**221**	**242**	**251**	**310**	**427**
Alaska	5	5	9	14	14	15	16	14	14	22
Arizona	1	2	1	<1	1	<1	<1	0	1	1
California	46	51	72	80	89	90	94	96	120	155
Nevada	0	0	1	1	2	3	3	4	5	5
Oregon	1	0	0	<1	1	<1	<1	2	1	2
P.A.D. Dist V	**53**	**58**	**83**	**95**	**106**	**108**	**113**	**116**	**141**	**185**
TOTAL U.S.	**1,107**	**1,194**	**1,474**	**1,660**	**1,657**	**2,002**	**2,259**	**2,177**	**2,909**	**3,969**

< = Less than.
Source: Hughes Tool Co.

The Vannsystem.®
It's like having a cleanup crew for every perforation you shoot.

The holes created by perforating guns are the only links between oil and gas formations and the wellbore that leads to the surface. It's a paradox that the very process of making these holes can be the greatest block to well production. The pressure and debris created by perforating charges can actually compact the walls of the perforations and leave them filled with "junk" to such a degree that the native permeability of the formation can be reduced by as much as 80%. The Vannsystem Tubing Conveyed℠ completion technique is the field-proven method for minimizing or eliminating this perforating damage, allowing wells to produce at their full, natural capacity.

Clean holes mean improved flow.

The Vannsystem is the first completion technique that allows operators to utilize pressure differential (up to 5000 psi) toward the wellbore over the entire interval. Large Vannguns® with deep-penetrating jet charges are mounted on the end of the tubing string and positioned at the exact downhole location. Before the guns are mechanically detonated, the packer is set, the blowout preventer removed and the wellhead installed…a unique safety feature of the Vannsystem. The well is under full control at the time of detonation, permitting the safe release of formation pressure at the desired differential into the tubing. The effect is to instantaneously backsurge every perforation, cleaning it of mud filtrate, cement contaminants and perforating debris. Formation compaction around each perforation is broken down and swept from the tunnel. The result is a perforation that is as near to ideal as possible. Deep, clean and flowing. Formation fluids or gases surge through the perforations, into the casing and up the tubing…reaching the surface, in many cases, just minutes after gun detonation.

2
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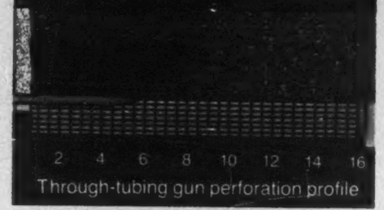
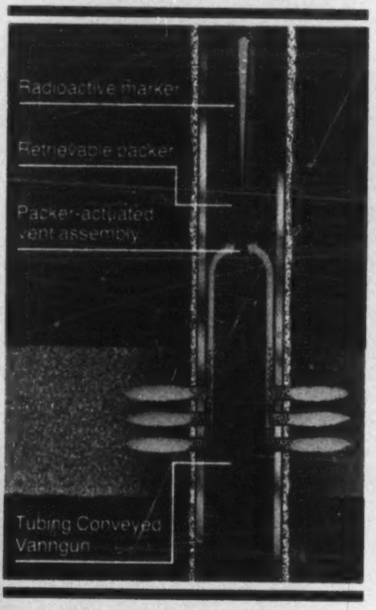
Vanngun perforation profile



Through-tubing gun perforation profile



Shoot 1 to 10,000 perforations in one trip.

Clean holes are only the beginning of the Vannsystem difference. A unique advantage of the Vannsystem is High Shot Density.℠ It allows for 12 shots per foot in a precise pattern that increases flow area and reduces fluid/gas velocity entering the wellbore, giving producers great flexibility in controlling flow rates. And since it is a tubing conveyed system, any number and combination of Vannguns can be used to perforate multiple intervals in one trip. In a recent completion, the system was used to perforate 7 separate pay zones totaling 940 feet. Distance from top to bottom shot was 1498 feet and 10,908 shots were fired simultaneously. All in one trip and just 20 hours of total job completion time. No other completion technique can perform like that!

Vannsystem delivers value for your completion dollar.

The proven reliability, positive well control and increased perforating efficiency of the Vannsystem make it the completion system that's being chosen by more and more producers worldwide. The investment in a Vannsystem completion is returned in great savings of rig time and higher well production. Plus the safety aspects which offer much more than dollar value.

Technology for today's completion requirements.

The Vannsystem was developed in response to the growing demands being placed on energy producers. Demands for reliability, economy and safety. With literally hundreds of possible configurations, the Vannsystem can be utilized in oil or gas wells, in hard rock, unconsolidated sand, fluid sensitive formations or injection wells. It's a real advantage where high temperature, pressure or H_2S is present. It can be used with or without packers, it has been run with gravel packing equipment and in conjunction with pressure testing tools. It performs equally well in balanced, overbalanced or underbalanced conditions. In short, the Vannsystem should be considered for all your well completions.

You need all the details.

Over the last 10 years, the Vannsystem has been used to complete thousands of wells. You should know more about how it works and how it can help you. For literature or the name of the GEO Vann representative nearest you, please contact: GEO Vann, Headquarters Sales, P. O. Box 4449, Houston, TX 77210, 713/492-8787, Telex 790-389 GEOVANN HOU. In Calgary, call 403/262-3717. In Aberdeen, call 725404, Telex 739-929 GEOVAN G.

GEO
Vann
Engineered Well Completions

Alaska · California · Colorado · Louisiana · Mississippi · New Mexico · Oklahoma · Texas · Wyoming · Alberta · Aberdeen

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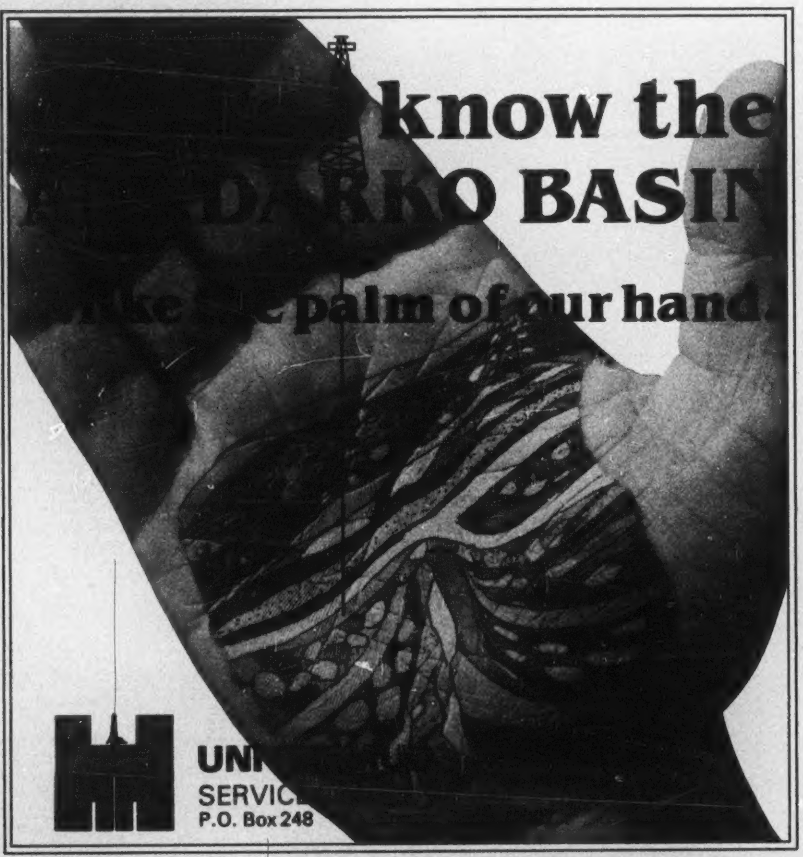
Estimated Natural Gas Value at the Wellhead — 1981

	$ per mcf		$ per mcf
Alabama	3.750	Nebraska	1.500
Alaska	0.950	New Mexico	2.150
Arizona	—	New York	2.250
Arkansas	1.100	North Dakota	1.350
California	3.250	Ohio	2.200
Colorado	1.700	Oklahoma	1.900
Florida	1.850	Oregon	2.600
Illinois	2.200	Pennsylvania	2.250
Indiana	2.100	South Dakota	—
Kansas	1.125	Tennessee	2.000
Kentucky	1.100	Texas	2.030
Louisiana	2.140	Utah	1.250
Maryland	4.750	Virginia	2.850
Michigan	2.600	West Virginia	3.100
Missouri	—	Wyoming	2.250
Mississippi	3.200	Total U.S.	2.063
Montana	1.650		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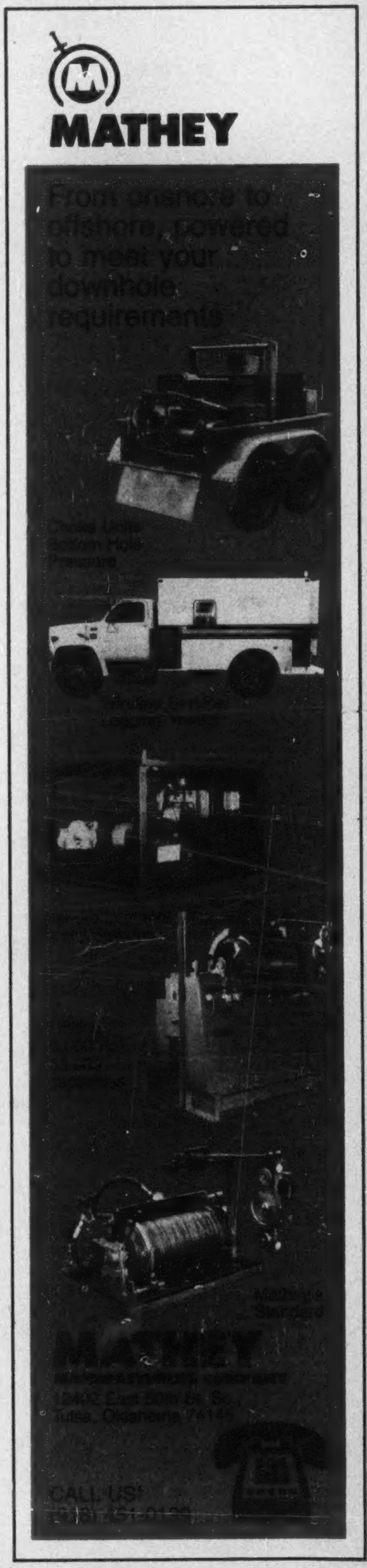
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MATHEY
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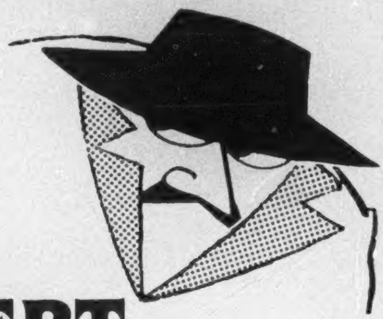
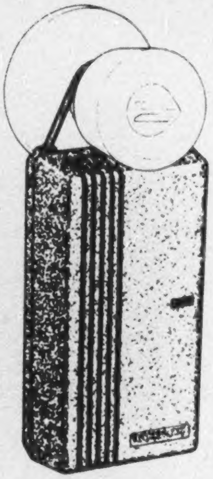
Safety and
Peace of Mind
with



DOOR-ALERT

Just $19.50



Keep the thieves and rapists out of your home! Protect yourself and your loved ones with DOOR-ALERT. Simply slip DOOR-ALERT over the inside door knob. If anyone touches the door with his hand, with a key, or with a tool, DOOR-ALERT will let out a piercing alarm and send the intruder on his way. And then it turns off automatically so that it won't keep alarming the neighbors.

DOOR-ALERT has a 3-second built-in delay.

This has two purposes:

1. So the alarm won't sound if someone just casually touches the door, and
2. To give you time to deactivate the alarm.

Keep DOOR-ALERT on the inside of your front door both while you are at home and while you are away. Nobody will be able to enter your home. And, of course, it is something you should have with you on your travels. DOOR-ALERT is beautifully styled. It measures 4½ x 2 x 1 and takes up almost no room. It works on one 9-volt cell (not included). It costs just $19.50, (you get two for $34.50) plus $2.00 postage and handling — a great investment for PEACE OF MIND.

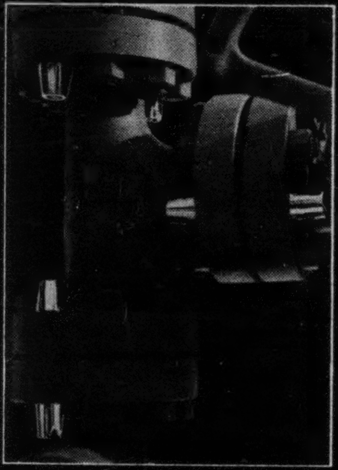
GUARANTEE: Satisfaction is completely guaranteed! Use DOOR-ALERT for 15 days. Not pleased? You owe nothing — not even an explanation. Just return for complete, prompt refund. You have everything to gain, and nothing to lose. In fact you'll wonder how you ever got along without DOOR-ALERT.

Yes! DOOR-ALERT is for me. Please send me ________ units at only $19.50 each, plus $2.00 postage and handling (California residents please add 6% sales tax).
Total $____________ enclosed.

NAME ____________________
ADDRESS ____________________
CITY ____________ STATE ________ ZIP ________

SEND TO: DOOR-ALERT
6333 Woodman Avenue
Van Nuys, CA 91401

Halt wellhead theft . . . with Gemini Flange Locks.



It's up to you to protect your revenue. Expensive Christmas trees are a lucrative target, and a thief can shut you down in minutes. But Gemini Flange Locks beat the thief at his own game (which could mean up to 30% reduction in insurance premiums for you.

The continuously tapered nut is triple nickel chrome-plated. A wrench can't get a grip. The case-hardened Rockwell 60 steel thwarts hammers and hacksaws. Plus, each Gemini Lock is secured with a narrow-groove keylock, and only you have the mating key wrench. Installs easily on flanged or studded connections. Equip your wells with Gemini Flange Locks: the proven theft deterrent.

CALL (713) 376-2440 FOR IMMEDIATE ATTENTION.

Gemini
SALES CORPORATION
P.O. Drawer A ● Tomball, TX 77375

Total New Field Wildcat Wells Drilled in The U.S.—1972-1981

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Florida	41	35	30	25	13	12	15	14	5	9
Maryland	0	0	1	0	0	0	0	0	0	0
New York	7	14	37	12	37	39	30	22	7	41
Pennsylvania	22	30	16	27	15	29	24	14	23	19
Virginia	0	4	1	2	1	0	2	4	1	3
West Virginia	31	18	19	25	24	21	19	23	15	25
Other	2	3	16	5	4	0	0	0	0	12
P.A.D. Dist I	**103**	**104**	**120**	**96**	**94**	**101**	**90**	**77**	**51**	**109**
Illinois	61	72	103	106	86	51	77	49	99	123
Indiana	82	101	102	68	86	67	103	64	103	95
Kansas	199	232	285	274	306	298	284	380	379	386
Kentucky	123	87	93	153	113	84	57	81	62	51
Michigan	173	165	251	270	279	326	265	239	317	381
Missouri	2	8	24	16	8	9	7	9	7	15
Nebraska	187	97	145	182	159	204	201	235	274	253
North Dakota	56	56	59	88	79	73	128	99	174	282
Ohio	18	19	11	5	14	11	3	18	1	8
Oklahoma	176	159	198	191	201	210	210	185	173	244
South Dakota	21	21	9	21	26	18	16	28	14	40
Tennessee	39	45	47	85	93	74	85	60	136	140
Other	0	0	2	0	0	1	0	0	0	0
P.A.D. Dist II	**1,137**	**1,062**	**1,329**	**1,459**	**1,450**	**1,426**	**1,436**	**1,447**	**1,739**	**2,018**
Alabama	85	66	47	59	63	42	59	90	77	68
Arkansas	89	76	88	78	76	78	95	99	109	145
Louisiana	481	490	465	521	425	496	555	542	669	789
Mississippi	232	191	258	226	232	247	243	232	254	337
New Mexico	181	177	192	156	138	114	125	155	225	195
Texas	1,458	1,632	1,980	2,325	2,325	2,460	2,708	2,726	2,690	2,854
P.A.D. Dist III	**2,526**	**2,632**	**3,030**	**3,365**	**3,259**	**3,437**	**3,785**	**3,844**	**4,024**	**4,388**
Colorado	389	357	296	349	310	282	336	280	318	438
Montana	401	387	316	286	234	230	237	218	282	325
Utah	69	46	47	59	34	79	65	66	61	114
Wyoming	352	300	402	376	335	382	402	306	344	455
Other	0	6	2	1	2	1	6	2	6	5
P.A.D. Dist IV	**1,211**	**1,096**	**1,063**	**1,071**	**915**	**974**	**1,046**	**872**	**1,011**	**1,337**
Alaska	11	9	7	12	7	14	4	14	14	15
Arizona	10	4	5	2	0	0	4	2	4	6
California	86	79	87	64	76	112	110	99	137	129
Nevada	2	0	2	4	7	10	13	9	12	20
Oregon	0	3	0	0	3	6	0	10	18	17
P.A.D. Dist V	**109**	**95**	**101**	**82**	**93**	**142**	**131**	**134**	**185**	**187**
Alaska Fed. Waters	0	0	0	0	0	7	3	4	4	0
Atlantic Coast	0	0	0	0	0	0	0	18	4	0
Gulf of Mexico	0	0	9	31	29	14	14	17	16	22
Total Fed. Waters	**0**	**0**	**9**	**31**	**29**	**21**	**17**	**39**	**24**	**22**
TOTAL U.S.	**5,086**	**4,989**	**5,652**	**6,073**	**5,840**	**6,101**	**6,505**	**6,413**	**7,034**	**8,061**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

Total Exploratory Wells Drilled in The U.S.—1972-1981

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Florida	42	37	30	27	14	12	16	15	5	9
New York	14	21	49	21	52	50	47	51	20	108
Pennsylvania	66	97	101	109	71	93	96	68	131	405
Virginia	0	4	8	8	3	9	5	4	1	3
West Virginia	83	80	102	91	99	108	165	108	112	155
Other	2	3	18	6	4	0	0	0	0	0
P.A.D. Dist I	**207**	**242**	**308**	**262**	**243**	**272**	**329**	**246**	**269**	**680**
Illinois	149	196	220	254	247	241	265	233	444	663
Indiana	131	139	168	156	195	277	267	186	324	348
Kansas	764	739	847	879	914	980	1,107	1,078	1,097	1,492
Kentucky	220	164	184	313	373	365	351	354	447	508
Michigan	182	176	258	272	282	329	266	246	321	381
Missouri	3	8	24	16	8	9	7	15	15	34
Nebraska	198	102	155	202	188	232	221	258	293	263
North Dakota	65	72	74	109	116	106	163	144	242	377
Ohio	55	60	172	121	171	125	40	125	60	102
Oklahoma	416	352	396	394	434	473	502	484	508	651
South Dakota	26	21	9	22	27	22	17	34	17	42
Tennessee	67	66	85	143	165	156	151	94	188	188
Other	0	0	2	0	0	1	0	0	0	0
P.A.D. Dist II	**2,276**	**2,095**	**2,594**	**2,881**	**3,120**	**3,316**	**3,357**	**3,251**	**3,956**	**5,049**
Alabama	85	70	58	65	69	44	63	97	80	76
Arkansas	101	79	90	78	76	86	95	105	111	153
Louisiana	736	712	646	708	611	645	781	678	798	957
Mississippi	236	207	292	263	266	260	247	244	280	342
New Mexico	216	191	209	170	172	172	174	201	292	294
Texas	1,973	2,325	2,907	3,203	3,269	3,549	3,884	4,011	4,274	5,102
P.A.D. Dist III	**3,347**	**3,584**	**4,202**	**4,487**	**4,463**	**4,756**	**5,244**	**5,336**	**5,835**	**6,924**
Colorado	512	442	338	413	372	383	463	439	487	737
Montana	447	435	381	379	321	319	308	298	374	432
Utah	86	70	56	66	39	94	79	86	91	173
Wyoming	451	369	470	461	395	465	477	379	412	575
Other	0	6	2	1	2	1	6	2	6	5
P.A.D. Dist IV	**1,496**	**1,322**	**1,247**	**1,320**	**1,129**	**1,262**	**1,333**	**1,204**	**1,370**	**1,922**
Alaska	13	14	12	22	7	22	10	16	14	20
Arizona	12	4	5	2	0	0	4	2	4	6
California	186	202	235	205	233	296	370	363	410	492
Nevada	2	0	2	4	7	14	13	10	12	20
Oregon	0	3	0	0	3	2	0	17	22	30
P.A.D Dist V	**213**	**223**	**254**	**233**	**250**	**334**	**397**	**408**	**462**	**568**
Alaska Fed. Waters	0	0	0	0	0	7	3	4	4	0
Atlantic Coast	0	0	0	0	0	0	0	18	4	0
Gulf of Mexico	0	0	14	31	29	14	14	17	16	22
Total Fed. Waters	**0**	**0**	**14**	**31**	**29**	**21**	**17**	**39**	**24**	**22**
TOTAL U.S.	**7,539**	**7,466**	**8,619**	**9,214**	**9,234**	**9,961**	**10,677**	**10,484**	**11,916**	**15,165**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

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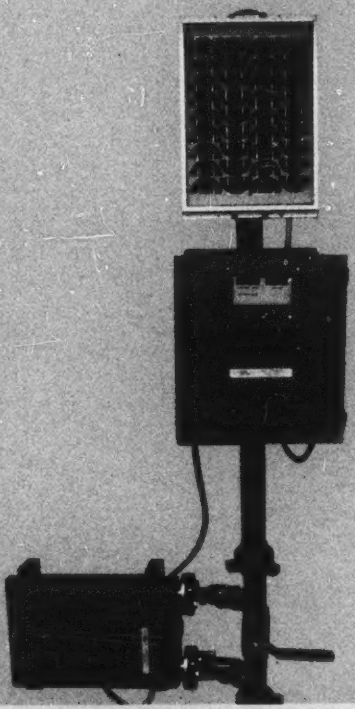
Percent of U.S. Energy Consumption Supplied By:

	Liquid Petroleum	*Natural Gas (Dry)*	*Total*
1962	44.6	29.5	74.1
1963	44.2	29.8	74.0
1964	43.5	30.3	73.8
1965	43.6	30.2	73.8
1966	43.2	30.9	74.1
1967	43.5	31.3	74.8
1968	43.8	31.7	75.5
1969	43.7	32.4	76.1
1970	44.0	32.8	76.8
1971	44.4	33.2	77.6
1972	45.8	32.0	77.8
1973	46.7	30.2	76.9
1974	46.0	29.9	76.9
1975	46.3	28.2	74.5
1976	47.2	27.3	74.5
1977	48.7	26.1	74.8
1978	48.6	25.6	74.2
1979	47.2	26.0	73.2
1980	44.9	26.8	71.7
1981	43.3	27.0	70.3

Source: U.S. Dept. of Energy



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Total Wells Drilled in The U.S.—1972-1981

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Florida	113	67	48	47	30	29	29	41	12	23
New York	145	161	348	437	596	538	482	428	494	581
Pennsylvania	956	1,142	1,322	1,496	1,311	1,462	1,748	1,941	2,020	3,554
Virginia	0	9	61	36	11	25	31	25	14	41
West Virginia	679	701	780	794	956	1,213	1,404	1,474	1,717	1,882
Other	20	4	18	6	9	0	0	9	0	0
P.A.D. Dist. I	**1,913**	**2,084**	**2,577**	**2,816**	**2,913**	**3,267**	**3,694**	**3,918**	**4,257**	**6,081**
Illinois	655	611	823	1,041	1,527	1,174	1,167	1,208	2,127	3,282
Indiana	285	259	390	400	507	624	683	500	746	831
Kansas	2,458	2,114	2,825	3,398	3,977	3,933	4,322	4,306	5,161	6,865
Kentucky	822	661	697	973	1,094	1,039	961	986	1,294	1,780
Michigan	317	281	414	519	522	600	521	527	682	766
Missouri	6	9	101	92	45	54	49	81	31	223
Nebraska	292	163	230	345	323	424	384	453	538	607
North Dakota	99	124	128	213	234	255	327	364	586	743
Ohio	1,333	1,504	1,790	1,223	1,919	2,593	2,606	3,492	3,269	5,455
Oklahoma	2,519	2,403	3,189	3,796	4,393	4,976	5,859	6,362	9,073	11,329
South Dakota	36	22	11	28	32	41	45	50	41	79
Other	94	100	137	203	215	245	222	227	340	315
P.A.D. Dist. II	**8,916**	**8,251**	**10,735**	**12,231**	**14,788**	**15,928**	**17,146**	**18,556**	**23,888**	**32,275**
Alabama	116	102	98	110	133	133	169	214	189	212
Arkansas	350	292	320	329	440	495	450	505	612	887
Louisiana	3,093	2,940	2,830	3,098	3,476	3,398	3,767	4,078	4,956	5,575
Mississippi	462	361	450	453	469	540	489	544	631	758
New Mexico	1,059	1,098	1,142	1,247	1,006	1,350	1,583	1,607	1,966	2,451
Texas	8,088	8,494	9,808	12,483	12,740	14,759	15,037	16,149	19,253	23.940
P.A.D. Dist III	**13,168**	**13,287**	**14,648**	**17,720**	**18,264**	**20,675**	**21,495**	**23,097**	**27,607**	**33,823**
Colorado	1,008	840	843	1,198	1,052	1,211	1,224	1,036	1,253	1,707
Montana	773	647	673	913	674	761	673	750	882	1,064
Utah	160	196	196	196	126	277	277	255	280	421
Wyoming	1,066	920	1,001	1,301	975	1,307	1,395	1,335	1,407	1,705
Other	0	6	2	1	2	1	6	2	6	5
P.A.D. Dist. IV	**3,007**	**2,609**	**2,715**	**3,609**	**2,829**	**3,557**	**3,575**	**3,378**	**3,828**	**4,902**
Alaska	31	35	38	67	81	72	75	73	134	141
Arizona	23	8	11	3	0	0	7	8	4	7
California	1,683	1,325	2,153	2,615	2,540	2,917	2,475	2,150	2,659	3,224
Nevada	2	0	2	4	7	19	16	16	13	24
Oregon	12	3	0	0	3	2	0	21	31	30
P.A.D. Dist. V	**1,751**	**1,371**	**2,204**	**2,689**	**2,631**	**3,010**	**2,573**	**2,268**	**2,841**	**3,426**
Alaska Fed. Waters	0	0	0	0	0	11	3	4	4	0
Atlantic Coast	0	0	0	0	0	1	7	18	4	0
Gulf of Mexico	0	0	14	32	30	30	20	24	33	29
Total Fed. Waters	**0**	**0**	**14**	**32**	**30**	**42**	**30**	**46**	**41**	**29**
TOTAL U.S.	**28,755**	**27,602**	**32,893**	**39,097**	**41,455**	**46,479**	**48,513**	**51,263**	**62,462**	**80,536**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

United States Crude Oil Production—1972-1981

(Thousands of Barrels Daily)

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Florida	46.2	89.6	99.6	114.7	121.5	127.8	130.2	129.2	117.2	95.3
New York	2.8	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3
Pennsylvania	9.4	9.0	9.5	9.0	8.3	7.4	7.9	7.9	7.2	10.2
Virginia	**	**	**	**	**	**	**	**	**	.04
West Virginia	7.3	6.5	7.3	6.8	6.9	6.9	6.5	6.6	6.4	9.5
P.A.D. Dist. I	**65.7**	**107.7**	**118.9**	**132.9**	**139.0**	**144.4**	**146.9**	**146.0**	**133.1**	**117.3**
Illinois	95.3	84.0	75.5	71.4	71.8	70.2	64.0	59.7	62.0	70.4
Indiana	16.7	14.6	13.5	12.7	12.7	14.6	12.8	12.9	13.6	12.9
Kansas	201.5	181.5	169.0	161.9	160.4	157.5	155.0	156.2	164.3	180.3
Kentucky	26.5	23.8	21.5	20.7	20.4	18.0	15.7	15.1	16.2	17.9
Michigan	35.5	40.0	49.4	66.9	83.1	90.3	95.0	95.5	97.8	89.5
Nebraska	23.8	19.8	18.1	16.8	16.9	16.4	16.1	16.6	17.0	18.3
North Dakota	56.3	55.4	54.0	56.0	59.4	63.8	68.0	84.7	110.2	125.2
Ohio	25.6	24.1	24.9	26.2	27.3	28.4	30.6	32.8	35.3	37.1
Oklahoma	567.3	523.8	487.1	446.9	441.0	428.4	412.2	393.6	410.2	422.1
South Dakota	0.6	0.8	1.3	1.3	1.2	1.7	2.4	2.3	2.1	2.7
Other[1]	0.7	0.8	2.2	2.0	1.8	2.2	1.8	1.9	2.4	3.1
P.A.D. Dist. II	**1,049.8**	**968.6**	**916.5**	**882.8**	**896.0**	**891.7**	**873.6**	**871.3**	**931.1**	**979.6**
Alabama	27.2	32.0	36.5	36.9	40.2	50.0	54.3	52.5	60.5	56.7
Arkansas	50.6	49.4	45.3	44.2	49.4	55.3	55.7	51.7	49.8	51.6
Louisiana	2,436.7	2,278.1	2,020.0	1,783.1	1,657.1	1,542.2	1,459.6	1,341.6	1,281.8	1,236.2
Gulf	2,315.7	2,169.2	1,913.7	1,680.8	1,552.7	1,441.1	1,363.1	1,254.1	1,193.2	1,140.0
Other	121.0	108.9	106.3	102.3	104.4	101.1	96.5	87.5	88.6	95.8
Mississippi	166.9	153.7	139.1	127.7	125.9	117.9	115.1	102.3	98.2	94.2
New Mexico	302.0	276.7	270.4	260.5	251.7	239.0	228.4	218.2	205.1	197.7
Texas	3,556.5	3,547.0	3,457.9	3,347.8	3,250.0	3,117.5	2,942.6	2,789.3	2,670.6	2,607.3
P.A.D. Dist. III	**6,539.9**	**6,336.9**	**5,969.2**	**5,600.2**	**5,374.4**	**5,121.9**	**4,855.7**	**4,555.6**	**4,366.0**	**4,243.7**
Colorado	87.5	100.2	102.8	104.4	106.5	108.1	100.8	88.5	81.4	83.0
Montana	92.6	94.8	94.7	90.0	89.7	89.5	83.5	82.1	80.0	84.4
Utah	72.6	89.5	107.8	115.9	93.7	90.7	85.9	76.0	68.2	65.0
Wyoming	382.5	388.8	383.5	372.5	366.5	373.9	376.4	361.3	345.2	334.7
P.A.D. Dist. IV	**635.2**	**673.3**	**688.8**	**682.8**	**656.4**	**662.2**	**646.6**	**607.9**	**574.8**	**567.1**
Alaska	199.2	198.1	193.4	191.3	173.2	463.6	1,229.1	1,400.9	1,616.6	1,609.1
Arizona	2.7	2.2	2.0	1.7	1.4	1.2	1.1	1.3	1.1	.98
California	948.2	920.8	885.0	882.7	890.8	957.8	951.2	965.1	975.2	1,054.7
Nevada	0.2	0.3	0.4	0.3	0.4	1.8	3.2	3.4	2.4	1.92
P.A.D. Dist. V	**1,150.3**	**1,121.4**	**1,080.8**	**1,076.0**	**1,065.8**	**1,424.4**	**2,184.6**	**2,370.7**	**2,595.3**	**2,666.7**
TOTAL U.S.	**9,440.9**	**9,207.9**	**8,774.2**	**8,374.7**	**8,131.6**	**8,244.6**	**8,707.4**	**8,551.5**	**8,600.3**	**8,574.4**

**Less than 100 barrels daily.

[1] Missouri and Tennessee.

Source: Energy Information Administration.

1980 Consumption of Motor Gasoline

(Thousand Barrels)

Alabama	46,715
Alaska	4,795
Arizona	31,636
Arkansas	28,048
California	261,715
Colorado	35,793
Connecticut	31,609
Delaware	6,996
Florida	114,536
Georgia	68,450
Hawaii	8,441
Idaho	11,627
Illinois	114,685
Indiana	63,956
Iowa	37,171
Kansas	31,204
Kentucky	41,795
Louisiana	49,555
Maine	12,310
Maryland	46,219
Massachusetts	54,802
Michigan	101,763
Minnesota	48,697
Mississippi	28,449
Missouri	61,967
Montana	10,942
Nebraska	19,349
Nevada	11,912
New Hampshire	9,791
New Jersey	77,643
New Mexico	17,778
New York	135,061
North Carolina	69,816
North Dakota	9,696
Ohio	118,633
Oklahoma	43,935
Oregon	31,681
Pennsylvania	111,913
Rhode Island	9,091
South Carolina	37,019
South Dakota	10,084
Tennessee	57,570
Texas	193,012
Utah	17,500
Vermont	5,687
Virginia	61,886
Washington	44,822
West Virginia	20,125
Wisconsin	51,842
Wyoming	8,898
District of Columbia	4,082
Total U.S.	2,532,792

Source: Department of Transportation.

Percent of U.S. Crude Oil Production by "Chase Bank Group" of Companies and "All Other" Group 1949-1980

	Chase Bank Group of Companies	*All Other*	*Total U.S.*
1969	69.5	30.5	100.0
1970	70.7	29.3	100.0
1971	71.3	28.7	100.0
1972	71.3	28.7	100.0
1973	71.3	28.7	100.0
1974	70.4	29.6	100.0
1975	70.3	29.7	100.0
1976	68.7	31.3	100.0
1977	68.8	31.2	100.0
1978	71.1	28.9	100.0
1979	69.5	30.5	100.0
1980	70.6	29.4	100.0
Excluding North Slope			
1977	67.5	32.5	100.0
1978	67.0	33.0	100.0
1979	64.1	35.9	100.0
1980	64.3	35.7	100.0

Source: Chase Manhattan Bank

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Stripper Wells:

Crude Oil Production From Stripper Wells (Thous. Bbls.)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Alabama	0	26	46	87	117	162	139	121	144	125
Arizona	3	2	0	4	5	6	7	5	4	16
Arkansas	7,239	7,282	6,659	6,748	5,044	5,199	6,172	7,754	7,231	5,689
California	58,245	65,531	61,452	77,497	60,574	52,248	51,410	49,558	45,521	44,110
Colorado	2,050	2,024	1,920	1,829	1,953	2,012	2,017	2,018	1,955	1,989
Illinois	38,304	33,128	28,827	26,024	25,215	24,936	23,614	21,160	20,325	20,167
Indiana	6,439	6,108	5,254	4,920	4,032	4,471	5,255	4,560	4,557	4,019
Kansas	51,857	50,448	45,949	44,615	43,707	44,433	44,190	44,461	43,948	44,545
Kentucky	10,531	9,128	7,314	6,464	6,183	6,173	5,421	4,713	4,549	4,573
Louisiana	8,078	7,599	7,325	7,502	7,574	8,176	7,740	7,916	7,681	7,657
Michigan	4,732	4,826	4,863	4,883	4,760	4,602	6,233	5,602	5,620	4,717*
Mississippi	1,043	425	438	571	649	1,215	1,349	1,233	1,601	1,890
Missouri	66	59	60	56	57	60	60	53	54	127
Montana	1,919	1,910	2,144	2,024	3,579	2,947	3,255	2,805	2,830	2,710
Nebraska	1,191	1,122	1,196	1,379	1,545	1,758	2,012	2,025	1,865	2,237
Nevada	0	0	0	0	0	0	0	0	0	9
New Mexico	10,167	10,075	10,224	10,835	11,082	11,141	11,547	11,831	12,068	12,924
New York	1,097	1,018	969	896	875	857	813	852	855	824
North Dakota	937	798	854	933	930	1,075	1,146	1,196	1,250	1,225
Ohio	5,800	6,551	6,157	6,362	6,705	6,996	7,251	7,808	8,367	9,049
Oklahoma	80,896	77,967	74,110	73,695	72,530	73,459	74,400	74,175	76,000	79,945
Pennsylvania	3,798	3,441	3,282	3,399	3,199	2,950	2,659	2,565	2,816	2,650
South Dakota	28	26	27	21	18	21	15	16	22	25
Tennessee	30	25	45	108	126	140	194	270	387	294
Texas	122,417	116,633	112,247	126,387	126,018	129,700	127,886	131,211	136,590	141,825
Utah	83	97	132	123	98	262	136	135	180	220
Virginia	1	0	0	3	3	3	2	2	4*	10
West Virginia	2,969	2,677	2,407	2,673	2,478	2,400	2,384	2,255	2,382	2,313
Wyoming	3,382	2,996	1,785	1,898	5,107	4,791	5,225	5,333	5,597	5,211
TOTAL U.S.	423,322	411,924	385,684	411,936	394,163	392,191	392,532	391,633	394,405	401,095

Number of Producing Stripper Wells As of December 31:

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Alabama	0	14	39	44	75	71	78	69	78	68
Arizona	2	2	1	4	6	7	7	7	8	10
Arkansas	5,961	6,203	6,201	6,094	6,100	6,025	6,736	6,822	6,767	6,820
California	23,753	31,391	31,466	34,559	32,124	29,983	28,328	24,198	25,957	25,400
Colorado	774	807	867	818	881	942	990	1,016	1,074	1,143
Illinois	25,202	24,363	23,960	23,279	23,222	23,275	23,499	23,622	23,860	24,501
Indiana	6,995	7,570	4,251	3,962	4,654	4,853	5,056	5,038	5,092	5,022
Kansas	40,513	39,853	40,176	40,176	40,597	41,764	42,273	43,154	44,686	41,876
Kentucky	14,585	14,511	14,201	13,914	13,690	13,817	14,046	13,953	14,028	14,075
Louisiana	12,318	12,907	12,649	12,808	12,723	13,185	13,189	13,600	12,131	15,889
Michigan	3,392	3,389	3,356	3,370	3,330	3,260	3,276	3,331	3,405	3,325*
Mississippi	313	211	217	278	310	617	654	657	813	1,523
Missouri	139	137	137	157	163	173	161	144	157	301
Montana	1,311	1,186	1,295	1,338	1,873	1,918	1,945	1,983	1,996	2,082
Nebraska	484	417	526	577	638	812	919	987	1,037	1,223
Nevada	0	0	0	0	0	0	0	0	0	4
New Mexico	9,143	9,122	9,458	9,991	10,274	10,544	10,956	11,401	11,829	12,519
New York	5,552	5,528	5,282	4,828	5,231	4,916	4,913	4,700	5,000	5,220
North Dakota	721	749	635	529	569	655	687	741	782	878
Ohio	14,653	14,863	14,906	15,406	15,482	15,586	16,122	17,006	18,222	19,650
Oklahoma	54,712	54,788	57,000	59,817	58,736	53,357	56,239	59,971	64,893	66,128
Pennsylvania	34,029	32,596	31,539	32,095	31,661	31,274	28,400	27,768	27,925	25,991
South Dakota	11	12	12	8	9	10	16	11	10	12
Tennessee	46	41	53	99	133	159	213	265	318	387
Texas	84,950	83,666	82,302	87,412	89,027	91,498	92,887	96,713	98,487	103,594
Utah	44	53	84	74	48	77	74	95	106	125
Virginia	3	1	0	3	7	7	4	5	7	8
West Virginia	13,270	13,375	13,500	13,600	13,680	13,800	13,875	13,925	14,000	14,150
Wyoming	1,811	1,716	1,116	926	2,629	3,148	3,387	3,453	3,642	3,252
TOTAL U.S.	353,696	359,471	355,229	366,096	367,872	365,733	368,930	374,635	386,310	395,176

Source: Interstate Oil Compact Commission and National Stripper Well Association.

*Estimated

Total Wells Drilled for Oil and Gas
All Time to January 1, 1982

(Excluding Service Wells)

	OIL		GAS		DRY		TOTAL
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*
Florida	238	27.5	2	0.2	626	72.3	866
Maryland	0	0	72	61.5	45	38.5	117
New York	8,946	71.2	2,627	20.9	986	7.9	12,559
Pennsylvania	243,646	79.7	23,892	7.8	38,264	12.5	305,802
Virginia	21	5.2	293	72.5	90	22.3	404
West Virginia	46,718	44.4	39,247	37.3	19,218	18.3	105,183
P.A.D. Dist. I	**299,569**	**70.5**	**66,133**	**15.6**	**59,229**	**13.9**	**424,931**
Illinois	71,427	61.2	1,405	1.2	43,927	37.6	116,759
Indiana	36,385	59.7	2,051	3.4	22,519	36.9	60,955
Kansas	104,962	51.8	19,925	9.8	77,689	38.4	202,576
Kentucky	46,216	52.8	9,643	11.0	31,741	36.2	87,600
Michigan	12,692	39.8	2,520	7.9	16,651	52.3	31,863
Missouri	331	24.2	182	13.3	854	62.5	1,367
Nebraska	4,671	30.1	181	1.2	10,658	68.7	15,510
North Dakota	3,976	49.5	58	0.8	3,992	49.7	8,026
Ohio	65,980	46.5	40,373	28.5	35,541	25.0	141,894
Oklahoma	208,963	60.7	36,217	10.5	98,958	28.8	344,138
South Dakota	143	16.2	37	4.2	702	79.6	882
Tennessee	1,000	25.4	805	20.5	2,125	54.1	3,930
P.A.D. Dist. II	**556,746**	**54.8**	**113,397**	**11.2**	**345,357**	**34.0**	**1,015,500**
Alabama	802	25.2	447	14.1	1,929	60.7	3,178
Arkansas	16,284	54.8	2,414	8.1	11,029	37.1	29,727
Louisiana	72,805	46.5	25,536	16.3	58,309	37.2	156,650
Mississippi	6,810	33.2	1,069	5.2	12,635	61.6	20,514
New Mexico	26,173	50.1	14,928	28.5	11,205	21.4	52,306
Texas	431,165	59.0	59,452	8.1	240,705	32.9	731,322
P.A.D. Dist. III	**554,039**	**55.8**	**103,846**	**10.4**	**335,812**	**33.8**	**993,697**
Colorado	8,149	26.8	4,687	15.4	17,544	57.8	30,380
Montana	9,321	36.9	3,639	14.4	12,289	48.7	25,249
Utah	2,482	38.8	893	13.9	3,025	47.3	6,400
Wyoming	22,523	51.9	2,979	6.9	17,877	41.2	43,379
P.A.D. Dist. IV	**42,475**	**40.3**	**12,198**	**11.6**	**50,735**	**48.1**	**105,408**
Alaska	885	61.8	104	7.3	443	30.9	1,432
Arizona	46	10.3	34	7.6	367	82.1	447
California	95,631	77.4	2,825	2.3	25,164	20.4	123,620
Nevada	30	11.7	1	0.4	225	87.9	256
Oregon	0	0	10	3.5	274	96.5	284
P.A.D. Dist. V	**96,592**	**76.6**	**2,974**	**2.4**	**26,473**	**21.0**	**126,039**
Alaska	877	61.5	103	7.2	446	31.3	1,426
Atlantic Coast	0	0	0	0	29	100.0	29
Gulf of Mexico	41	19.3	2	0.9	169	79.7	212
Total Federal Waters	41	15.8	2	0.8	216	83.4	1,667
Miscellaneous	3	1.0	1	0.3	297	98.7	301
TOTAL U.S.	**1,549,465**	**58.1**	**298,551**	**11.2**	**818,119**	**30.9**	**2,667,543**

Source: Oil and Gas Journal, American Petroleum Institute, and American Association of Petroleum Geologists.

Petroleum Production and New Reserves Found
All Time to December 31, 1980

	Total Liquid Petroleum			*Natural Gas*		
	(Mil. Bbls.)			*(Bil. Cub. Ft.)*		
	Found	*Produced*	*Proved Reserves Dec. 31, 1980*	*Found*	*Produced*	*Proved Reserves Dec. 31, 1980*
Florida	662	501	161	479	357	122
Maryland	0	0	0	†	†	†
New York	†	†	†	794	586	208
Pennsylvania	1,349	1,314	35	10,339	9,388	951
Virginia	†	†	†	†	†	†
West Virginia	892	765	127	17,896	15,337	2,559
P.A.D. Dist. I	**2,903**	**2,580**	**323**	**29,508**	**25,668**	**3,840**
Illinois	3,369	3,256	113	†	†	†
Indiana	1,277	1,254	23	†	†	†
Kansas	6,289	5,590	699	36,552	26,487	10,065
Kentucky	823	763	60	4,019	3,483	536
Michigan	1,212	895	317	1,862	311	1,551
Missouri	†	†	†	†	†	†
Nebraska	442	396	46	†	†	†
North Dakota	929	654	275	1,498	904	594
Ohio	988	872	116	7,439	5,740	1,699
Oklahoma	15,888	14,354	1,534	66,312	52,404	13,908
South Dakota	†	†	†	†	†	†
Tennessee	†	†	†	†	†	†
P.A.D. Dist. II	**31,217**	**28,034**	**3,183**	**117,682**	**89,329**	**28,353**
Alabama	559	279	280	995	313	682
Arkansas	1,669	1,576	123	5,407	3,611	1,796
Louisiana	26,646	22,549	4,097	207,120	158,735	48,385
Mississipi	2,247	2,025	222	7,398	5,622	1,776
New Mexico	6,876	5,788	1,088	46,274	32,318	13,956
Texas	65,941	55,283	10,658	284,024	230,854	53,170
P.A.D. Dist. III	**103,968**	**87,500**	**16,468**	**551,218**	**431,453**	**119,765**
Colorado	1,786	1,409	377	6,682	3,512	3,170
Montana	1,266	1,071	195	3,114	1,806	1,308
Utah	1,083	758	325	2,722	1,438	1,284
Wyoming	6,209	4,940	1,269	18,525	9,112	9,413
P.A.D. Dist. IV	**10,344**	**8,178**	**2,166**	**31,043**	**15,868**	**15,175**
Alaska	11,236	2,474	8,762	35,526	2,131	33,395
Arizona	†	†	†	†	†	†
California	25,525	19,935	5,590	34,394	28,843	5,551
Nevada	†	†	†	†	†	†
Oregon	0	0	0	†	†	†
P.A.D. Dist. V	**36,761**	**22,409**	**14,352**	**69,920**	**30,974**	**38,946**
All Other States	301	260	41	2,332	2,152	180
TOTAL U.S.	**186,494**	**148,961**	**36,533**	**801,703**	**595,444**	**206,259**

† Included in All Other States.

Source: American Petroleum Institute and American Gas Association and U.S. Department of Energy.

Estimated Average Number of Employees in Important Segments of the Petroleum Industry in 1981

	Mining	*Manufacturing*		*Transportation*		*Wholesale*	*Retail*	
	Crude Oil and Natural Gas Extraction	*Petroleum Refining*	*Lubricating Oils and Greases*	*Pipelines (Except Natural Gas)*	*Gas Production and Distribution*	*Petroleum and Petroleum Products*	*Gasoline Service Stations*	*Total*
Alabama	2,176	419	36	96	2,555	4,349	7,428	17,059
Alaska	7,064	N.D.	0	N.D.	261	307	835	8,467
Arizona	145	100	0	100	980	1,576	7,330	10,231
Arkansas	3,994	741	N.D.	330	2,399	2,387	4,557	14,408
California	37,969	25,863	873	907	10,172	16,469	61,405	153,658
Colorado	25,104	595	31	163	2,348	3,327	9,389	40,957
Connecticut	280	N.D.	90	N.D.	1,300	2,670	8,940	13,280
Delaware	36	1,005	10	0	389	499	1,491	3,430
Florida	696	139	165	71	2,153	7,399	26,897	37,520
Georgia	122	105	126	494	3,620	6,393	14,260	25,120
Hawaii	N.D.	462	0	0	362	469	3,307	4,600
Idaho	282	0	0	15	532	1,643	1,984	4,456
Illinois	7,300	7,600	850	1,100	8,900	10,500	27,200	63,450
Indiana	922	3,259	402	525	3,166	4,282	15,625	28,181
Iowa	12	0	47	190	1,219	3,621	10,759	15,848
Kansas	17,307	4,629	357	2,162	4,857	2,681	6,922	38,915
Kentucky	3,421	3,716	2	169	2,970	3,081	9,379	22,738
Louisiana	94,721	15,288	519	1,124	7,092	6,588	9,438	134,770
Maine	N.A.	0	0	N.A.	N.A.	1,300	2,300	3,600
Maryland	67	0	197	0	1,451	3,532	12,960	18,207
Massachusetts	29	N.D.	338	N.D.	5,020	3,712	13,614	22,713
Michigan	4,700	2,183	431	243	8,382	6,496	20,170	42,605
Minnesota	301	1,003	106	198	2,677	2,877	15,067	22,229
Mississippi	11,778	1,379	47	179	2,235	3,171	4,743	23,532
Missouri	300	N.A.	280	250	5,000	7,100	13,270	26,200
Montana	6,852	1,074	0	100	113	1,760	2,596	12,495
Nebraska	1,053	62	N.D.	110	3,910	1,774	6,125	13,034
Nevada	744	48	N.D.	22	541	552	3,599	5,506
New Hampshire	2	0	1	3	317	666	2,464	3,453
New Jersey	131	9,260	989	159	1,994	4,715	18,258	35,506
New Mexico	16,328	1,019	17	251	3,686	1,846	4,149	27,296
New York	2,463	10,708	396	125	7,139	14,096	27,830	62,757
North Carolina	8	0	165	120	2,490	7,166	10,243	20,192
North Dakota	9,286	255	0	135	20	2,349	2,210	14,255
Ohio	12,413	10,305	648	750	7,951	6,550	25,044	63,661
Oklahoma	92,100	8,200	390	2,700	5,500	7,900	5,200	121,990
Oregon	125	0	7	0	1,526	2,401	7,880	11,939
Pennsylvania	5,061	13,396	1,397	719	9,089	11,040	28,079	68,781
Rhode Island	83	0	0	0	859	668	2,097	3,707
South Carolina	N.A.	N.A.	N.A.	N.A.	581	3,743	6,543	10,867
South Dakota	155	24	0	63	N.D.	1,480	2,647	4,369
Tennessee	1,124	319	27	48	1,771	4,498	12,251	20,038
Texas	278,896	43,960	962	5,968	28,833	26,724	36,279	421,622
Utah	5,915	939	N.A.	109	2,769	2,057	4,319	16,108
Vermont	0	0	0	0	142	351	1,676	2,169
Virginia	300	200	0	100	2,500	7,700	14,100	24,900
Washington*	103	1,625	N.D.	89	1,571	2,993	9,397	15,778
West Virginia	13	291	2,992	46	492	517	554	4,905
Wisconsin*	17	150	112	157	2,865	4,547	14,324	22,172
Wyoming	22,008	1,804	N.D.	424	914	1,162	2,991	29,303
Dist. of Columbia	34	150	0	0	726	369	1,047	2,326
TOTAL U.S.	**673,940**	**172,275**	**13,010**	**20,514**	**168,339**	**226,053**	**561,172**	**1,835,303**

N.D. = Non-Disclosure
N.A. = Not Available
* = 1980 Data

Estimated Cost of Drilling and Equipping Wells — 1980

	Wells Drilled (No.)	*Footage Drilled (Th. Ft.)*	*Total Cost (Th. $)*	*Average*		
				Depth Well (Ft.)	*Cost/ Well*	*Cost/ Foot*
Alabama	196	1,243	125,420	6,342	$ 639,898	$100.90
Alaska						
Onshore	142	1,479	548,417	10,415	3,862,092	370.80
Offshore	1	12	2,334	12,000	2,334,000	194.50
Total	143	1,491	550,751	10,427	3,851,406	369.38
Arkansas	611	3,216	161,985	5,264	265,115	50.37
California						
North	226	1,484	87,060	6,566	385,221	58.67
Central Coastal	290	1,134	118,951	3,910	410,176	104.90
East Central	1,710	4,086	354,189	2,389	207,128	86.68
South	129	524	61,566	4,062	477,256	117.49
Offshore	111	669	144,996	6,027	1,306,270	216.74
Total	2,466	7,896	766,762	3,202	310,933	97.11
Colorado	1,332	7,031	329,958	5,279	247,716	46.93
Florida	20	254	28,997	12,700	1,449,850	114.16
Illinois	2,092	5,601	142,964	2,677	68,338	25.52
Indiana	713	1,376	30,280	1,930	42,468	22.01
Kansas	5,516	18,752	487,611	3,340	88,399	26.00
Kentucky	1,335	1,880	57,758	1,408	43,264	30.72
Louisiana						
North	2,945	10,292	515,041	3,495	174,887	50.04
South	1,328	14,672	2,322,186	11,048	1,748,634	158.27
Offshore	807	8,384	2,453,583	10,389	3,040,375	292.65
Total	5,080	33,348	5,290,812	6,565	1,041,498	158.65
Michigan	623	2,840	151,724	4,559	243,538	53.42
Mississippi	674	6,092	518,342	9,039	769,053	85.09
Montana	810	3,498	244,059	4,319	301,307	69.77
Nebraska	498	2,380	54,360	4,779	109,157	22.84
New Mexico						
East	1,025	6,385	449,820	6,229	487,629	78.28
West	1,006	5,494	309,923	5,461	308,075	56.41
Total	2,031	11,879	809,742	5,849	398,691	398.69

Continued

Estimated Cost of Drilling and Equipping Wells — 1980

	Wells Drilled (No.)	Footage Drilled (Th. Ft.)	Total Cost (Th. $)	Average		
				Depth Well (Ft.)	Cost/ Well	Cost/ Foot
North Dakota	575	5,376	512,500	9,350	$ 891,304	$ 95.33
Oklahoma	8,932	42,644	2,918,491	4,774	326,746	68.44
Texas						
District 1	1,383	4,853	266,477	3,509	192,680	54.91
2	761	4,960	350,797	6,518	460,968	70.73
3	1,900	15,189	1,230,075	7,994	647,408	80.98
4	1,343	9,701	850,450	7,223	633,718	87.66
5	382	2,292	229,533	6,000	600,872	100.15
6	728	5,721	484,764	7,859	665,885	84.73
7B	2,974	9,695	330,833	3,260	111,242	34.12
7C	1,709	9,690	444,357	5,670	260,010	45.86
8	2,023	11,713	792,255	5,790	389,697	67.64
8A	1,473	8,489	386,117	5,763	262,130	45.48
9	2,975	9,918	352,887	3,334	118,617	35.58
10	861	5,502	374,982	6,390	435,519	68.15
Offshore	312	2,964	994,217	9,500	3,186,593	335.43
Total	18,824	100,688	7,087,745	5,349	376,527	70.39
Utah	278	1,662	261,776	5,978	941,640	157.51
Wyoming	1,322	10,381	1,080,939	7,852	817,654	104.13
Appalachian*	7,466	24,916	833,456	3,346	111,933	33.45
Offshore						
Federal Water						
Alaska	5	57	55,133	11,400	11,026,600	967.25
Atlantic Coast	4	64	47,141	16,000	11,785,250	736.58
Gulf of Mexico						
North**	32	353	148,895	11,031	4,652,969	421.80
Total	41	475	251,168	11,585	6,126,049	528.77
Other U.S.***	453	1,110	102,758	2,450	226,839	92.57
TOTAL U.S.	**62,011**	**296,031**	**22,800,356**	**4,774**	**367,682**	**77.02**

Source: Joint Association Survey.

*New York, Ohio, Pennsylvania, and West Virginia.

**Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

***Georgia, Idaho, Missouri, Nevada, South Dakota, Tennessee, Virginia, and Washington.

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Financial Data

	Rate of return (%)		Exploration and development outlays (Million dollars)		
Year	U.S. oil companies	All mfg. companies	Larger companies	Independents	Total
1961	8.7	8.9	2,417	1,583	4,000
1962	8.8	9.8	2,848	1,577	4,425
1963	9.8	10.3	2,452	1,673	4,125
1964	10.1	11.6	2,817	1,633	4,450
1965	11.3	13.0	2,847	1,363	4,210
1966	12.3	13.4	2,990	1,260	4,250
1967	12.6	11.7	3,212	1,153	4,365
1968	12.2	12.1	4,087	1,303	5,390
1969	10.9	11.5	3,786	1,482	5,250
1970	9.9	9.3	3,119	1,656	4,775
1971	9.3	9.7	2,740	1,160	3,900
1972	9.6	10.6	4,225	2,255	6,480
1973	10.5	13.0	5,275	2,865	8,140
1974	14.6	14.9	8,550	3,905	13,355
1975	12.9	11.6	6,830	3,420	10,250
1976	15.2	13.9	8,646	5,864	14,510
1977	14.2	14.2	10,305	6,195	16,500
1978	13.8	15.0	11,275	8,025	19,300
1979	18.2	16.5	15,000	11,750	26,750
1980	18.1	14.1	20,533	15,647	36,200
1981	18.1	13.8	N.A.	N.A.	50,000

Source: Chase Manhattan Bank and Federal Trade Commission

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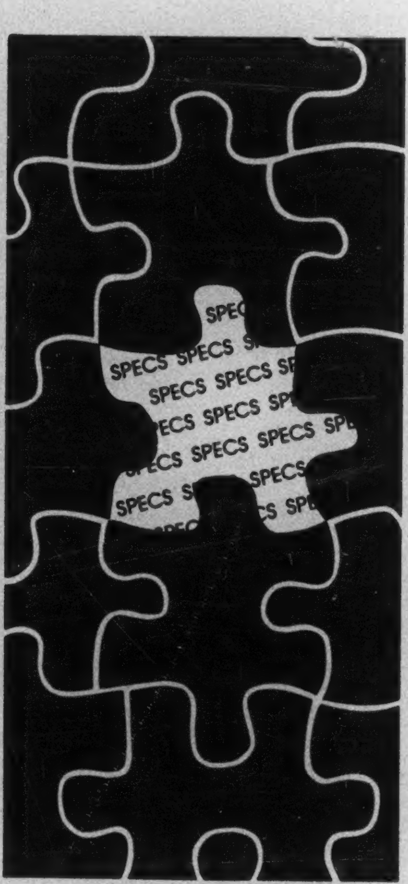
U.S. Drilling Costs & Cost Indices

	Cost Indices (1967 = 100)				Drilling Costs		
	Oil Field Machinery	Oil Well Casing	Line Pipe	Oil Field Wages	Total (Thous. $)	Per Well	Per Foot
1964	94.8	91.9	103.6	90.8	2,427,367	55,820	12.86
1965	95.2	96.2	97.9	93.2	2,401,437	60,648	13.44
1966	96.5	96.2	97.9	96.3	2,360,740	68,386	14.95
1967	100.0	100.0	100.0	100.0	2,299,178	72,902	15.97
1968	106.4	101.5	103.9	104.0	2,409,360	81,463	16.83
1969	112.7	104.5	109.2	110.5	2,610,671	88,554	17.56
1970	118.4	109.1	112.8	117.8	2,578,682	94,885	18.84
1971	122.6	120.7	124.7	128.0	2,371,492	94,708	19.03
1972	127.3	127.3	133.7	137.2	2,814,165	106,224	20.76
1973	133.2	133.2	139.1	147.7	3,074,532	117,152	22.50
1974	157.8	170.7	189.8	164.0	4,386,989	138,718	28.93
1975	196.3	211.5	227.8	186.2	6,571,214	177,793	36.99
1976	217.6	223.0	234.3	202.8	7,461,680	191,615	40.46
1977	236.5	244.3	260.5	219.4	9,956,453	227,181	46.81
1978	261.2	271.6	296.6	249.8	13,061,000	279,950	56.63
1979	289.7	285.2	303.4	270.3	16,078,930	331,367	67.70
1980	335.3	327.3	336.1	298.6	22,800,356	367,682	77.02
1981	397.5	407.6	394.0	332.6	N.A.	N.A.	N.A.

Source: Cost indices from U.S. Bureau of Labor Statistics and Drilling Costs from Joint Association Survey.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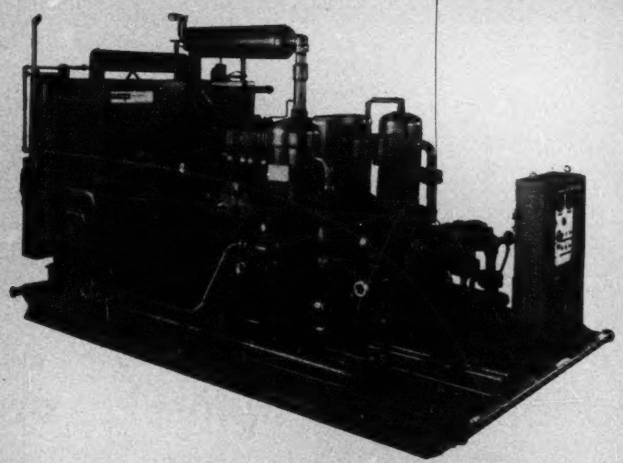
Estimated Proved World Reserves of Crude Oil as of Jan. 1 (Million Barrels)

	United States	*Canada*	*Latin America*	*Total West. Hemis.*	*Middle East*	*Africa*	*Other East. Hemis.*	*Total East. Hemis.*	*Total Free World*
1973	36,339	8,020	32,602	76,961	355,852	106,402	27,004	489,258	566,219
1974	35,300	7,674	31,640	74,614	350,162	67,304	31,626	449,092	523,706
1975	34,250	7,171	40,578	81,999	403,858	68,299	46,861	519,018	601,017
1976	32,682	6,653	35,368	74,703	368,411	65,085	46,722	480,218	554,921
1977	30,942	6,257	29,609	66,808	367,681	60,570	43,930	472,181	538,989
1978	29,486	5,971	40,370	75,827	366,166	59,200	46,612	471,978	547,805
1979	27,804	6,860	41,246	75,910	369,996	57,892	43,973	471,861	547,771
1980	27,051	6,800	56,473	90,324	361,947	57,072	42,831	461,850	552,174
1981	26,400	6,400	69,490	102,290	362,071	55,148	42,716	459,935	562,225
1982	29,785	7,300	84,982	122,067	362,840	56,172	43,785	462,797	584,864

Source: U.S. A.P.I. except 1981 from Oil & Gas Journal and 1982 from U.S. Energy Information Administration. All other data from Oil & Gas Journal



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Value of U.S. Petroleum Production—1981

	Crude Oil	*Natural Gas*	*Total Petroleum*
	(Thousand Dollars)		
Alabama	734,347	279,615	1,013,962
Alaska	14,091,365	230,375	14,321,740
Arizona	1,248	—	1,248
Arkansas	640,180	104,215	744,395
California	10,285,570	1,196,960	11,482,530
Colorado	1,088,787	321,570	1,410,357
Florida	1,226,095	63,630	1,289,725
Illinois	933,681	5,500	939,181
Indiana	171,797	420	172,217
Kansas	2,370,476	720,125	3,090,601
Kentucky	236,776	57,200	293,976
Louisiana	16,072,314	13,894,260	29,966,574
Maryland	—	475	475
Michigan	1,176,593	407,995	1,584,588
Missouri	7,770	—	7,770
Mississippi	1,125,551	569,780	1,695,331
Montana	1,090,472	84,465	1,174,937
Nebraska	237,754	4,500	242,254
Nevada	16,772	—	16,772
New Mexico	2,552,122	2,415,500	4,967,622
New York	30,747	27,000	57,747
N. Dakota	1,641,795	72,345	1,714,140
Ohio	493,663	244,420	738,083
Oklahoma	5,490,556	3,835,420	9,325,976
Oregon	—	12,775	12,775
Penn.	135,586	270,000	405,586
S. Dakota	34,950	—	34,950
Tennessee	35,106	18,000	53,106
Texas	33,631,770	13,945,410	47,577,180
Utah	813,356	103,625	916,981
Virginia	471	22,800	23,271
West Virginia	127,216	497,645	624,861
Wyoming	3,969,433	1,234,350	5,203,783
Total U.S.	100,414,981	40,640,375	141,055,356

Source: Based on data from U.S. Department of Energy

Estimated Consumption of Petroleum Products—1980

(Thousand Barrels)

	Motor Gasoline	Aviation Fuels[1]	Middle Distillates[2]	Residual Fuel Oil	L.P.G.	Asphalt Road Oil	All Other[3]	Total
Alabama	46,715	1,060	16,371	7,311	4,076	4,302	5,323	85,158
Alaska	4,795	7,161	6,631	396	157	423	1,313	20,876
Arizona	31,636	3,704	11,361	1,044	1,308	2,829	3,464	55,346
Arkansas	28,048	618	11,364	4,668	3,992	3,803	3,500	55,993
California	261,715	42,610	63,430	162,125	15,811	24,457	38,011	608,159
Colorado	35,793	3,881	11,481	1,787	3,187	3,128	3,949	63,206
Connecticut	31,609	1,613	22,685	28,214	1,236	865	5,750	91,972
Delaware	6,996	85	4,007	12,895	2,634	481	1,805	28,903
Florida	114,536	25,714	29,595	96,950	8,827	6,163	18,785	300,570
Georgia	68,450	12,638	20,260	8,511	6,130	6,586	8,171	130,746
Hawaii	8,441	9,905	5,971	13,234	1,295	389	2,614	41,849
Idaho	11,627	521	5,636	614	818	1,073	1,353	21,642
Illinois	114,685	16,115	37,424	28,394	31,964	10,939	15,966	255,487
Indiana	63,956	1,467	31,421	14,644	6,556	7,086	8,342	133,472
Iowa	37,171	727	15,899	367	9,197	2,303	4,379	70,043
Kansas	31,204	1,802	14,851	1,063	6,922	4,147	4,000	63,989
Kentucky	41,795	2,266	25,724	1,014	8,420	2,776	5,466	87,461
Louisiana	49,555	5,924	29,133	62,242	43,545	2,659	12,871	205,929
Maine	12,310	566	11,087	8,416	720	597	2,246	35,942
Maryland	46,219	1,912	23,550	16,080	1,700	3,646	6,206	99,313
Massachusetts	54,802	7,037	37,946	52,953	1,750	1,691	10,413	166,592
Michigan	101,763	4,456	29,022	12,011	5,547	4,799	10,508	168,106
Minnesota	48,697	4,304	21,937	3,095	6,339	4,876	5,950	95,198
Mississippi	28,449	518	10,075	15,078	4,689	2,796	4,106	65,711
Missouri	61,967	5,267	18,556	1,426	7,512	5,493	6,680	106,901
Montana	10,942	773	7,510	4,033	1,488	1,398	1,743	27,887
Nebraska	19,439	633	9,272	78	3,706	987	2,275	36,390
Nevada	11,912	4,678	4,009	2,502	725	805	1,641	26,272
New Hampshire	9,791	79	6,136	5,436	1,054	348	1,524	24,368
New Jersey	77,643	5,654	54,142	53,179	6,080	6,001	13,513	216,212
New Mexico	17,778	812	9,330	939	3,879	1,561	2,286	36,585
New York	135,061	29,213	74,568	112,893	4,638	6,767	24,210	387,350
North Carolina	69,816	2,325	27,202	9,115	6,572	4,240	7,952	127,222
North Dakota	9,696	349	8,133	717	1,073	987	1,396	22,351
Ohio	118,633	5,660	51,283	6,405	36,455	10,035	15,230	243,701
Oklahoma	43,935	1,991	12,370	733	7,402	6,628	4,871	77,930
Oregon	31,681	2,130	17,056	4,520	1,115	3,408	3,992	63,902
Pennsylvania	111,913	8,419	71,100	34,762	2,975	7,047	15,747	251,963
Rhode Island	9,091	281	5,095	2,230	742	1,430	1,258	20,127
South Carolina	37,019	622	12,065	7,126	3,818	2,100	4,182	66,932
South Dakota	10,084	291	4,839	118	2,083	875	1,218	19,508
Tennessee	57,570	3,404	20,615	1,502	2,295	4,639	6,002	96,027
Texas	193,012	21,330	88,443	65,392	156,320	14,631	35,943	575,071
Utah	17,500	1,457	8,474	3,456	1,071	1,959	2,261	36,178
Vermont	5,687	85	4,331	472	1,237	58	791	12,661
Virginia	61,886	8,163	26,299	24,690	3,192	3,596	8,521	136,347
Washington	44,822	8,432	18,561	17,336	1,225	2,813	6,213	99,402
West Virginia	20,125	297	11,015	1,466	2,829	983	2,447	39,162
Wisconsin	51,842	1,969	22,668	1,783	4,972	3,912	5,808	92,954
Wyoming	8,898	176	13,271	2,175	1,672	1,584	1,852	29,628
Dist. of Columbia	4,082	277	3,721	436	[4]	[4]	565	9,081
TOTAL U.S.	2,532,792	271,371	1,106,925	918,026	442,950	197,099	364,612	5,833,775

[1] Does not include aviation fuel for military use

[2] Includes Kerosene

[3] Estimated

[4] Dist. of Columbia included in Maryland

Source: Federal Highway Administration, U.S. Department of Energy, and Ethyl Corporation

Statistical Summary of the Petroleum Producing Industry—1952-1981

	PRODUCTION			IMPORTS [3]					PETROLEUM DEMAND				
Year	Crude Oil [2] (1,000 B/D)	Nat. Gas Liquids (1,000 B/D)	Total (1,000 B/D)	Crude Oil (1,000 B/D)	Refined Products (1,000 B/D)	Total (1,000 B/D)	OTHER SUPPLY [1] (1,000 B/D)	TOTAL SUPPLY (1,000 B/D)	Domestic (1,000 B/D)	Export (1,000 B/D)	Total (1,000 B/D)	CRUDE OIL VALUE (Mil. $)	CRUDE OIL PRICE $ per Bbl.
1952	6,256	612	6,868	573	379	952	7	7,827	7,283	436	7,719	5,785	2.53
1953	6,458	655	7,113	648	386	1,034	20	8,167	7,624	401	8,025	6,327	2.68
1954	6,343	692	7,035	656	396	1,052	23	8,110	7,784	355	8,139	6,425	2.78
1955	6,807	772	7,579	782	466	1,248	34	8,861	8,493	368	8,861	6,870	2.77
1956	7,151	801	7,952	934	502	1,436	43	9,431	8,822	430	9,252	7,297	2.79
1957	7,170	809	7,979	1,023	552	1,574	42	9,595	8,860	568	9,428	8,079	3.09
1958	6,710	808	7,518	953	747	1,700	64	9,282	9,146	276	9,422	7,380	3.01
1959	7,053	880	7,933	966	815	1,780	86	9,799	9,494	255	9,749	7,473	2.90
1960	7,035	930	7,965	1,015	799	1,815	146	9,926	9,807	202	10,009	7,420	2.88
1961	7,183	991	8,174	1,045	871	1,917	179	10,270	9,985	174	10,159	7,566	2.89
1962	7,332	1,021	8,353	1,126	956	2,082	175	10,610	10,410	168	10,578	7,769	2.90
1963	7,542	1,098	8,640	1,131	992	2,123	202	10,965	10,753	208	10,961	7,968	2.89
1964	7,614	1,155	8,769	1,198	1,060	2,258	217	11,244	11,032	202	11,234	8,017	2.88
1965	7,804	1,210	9,014	1,238	1,230	2,468	220	11,702	11,523	187	11,710	8,147	2.86
1966	8,295	1,284	9,579	1,225	1,348	2,573	245	12,397	12,095	198	12,293	8,727	2.88
1967	8,810	1,410	10,220	1,128	1,409	2,537	292	13,049	12,569	307	12,876	9,375	2.91
1968	9,096	1,503	10,599	1,290	1,550	2,840	348	13,787	13,404	231	13,635	9,795	2.94
1969	9,238	1,589	10,827	1,409	1,757	3,166	340	14,333	14,148	233	14,381	10,427	3.09
1970	9,637	1,660	11,297	1,324	2,094	3,419	355	15,071	14,792	259	14,709	11,174	3.18
1971	9,463	1,692	11,155	1,681	2,245	3,926	439	15,520	15,225	224	15,449	11,693	3.39
1972	9,441	1,744	11,185	2,216	2,525	4,741	444	16,370	16,379	223	16,602	11,707	3.39
1973	9,208	1,738	10,946	3,244	3,012	6,256	485	17,687	17,321	231	17,552	13,058	3.89
1974	8,774	1,688	10,462	3,477	2,635	6,112	491	17,065	16,666	220	16,886	21,581	6.87
1975	8,375	1,632	10,007	4,105	1,951	6,056	514	16,577	16,335	209	16,544	23,116	7.67
1976	8,132	1,604	9,736	5,287	2,026	7,313	592	17,641	17,476	223	17,699	24,230	8.19
1977	8,244	1,618	9,862	6,595	2,192	8,787	568	19,217	18,447	243	18,690	25,791	8.57
1978	8,707	1,567	10,274	6,195	2,008	8,203	492	18,969	18,862	362	19,224	28,478	9.00
1979	8,552	1,584	10,136	6,452	1,940	8,392	581	19,109	18,531	471	19,002	39,368	12.64
1980	8,597	1,564	10,161	5,219	1,568	6,787	716	17,664	17,020	541	17,561	67,933	21.19
1981	8,574	1,588	10,162	4,150	1,575	5,725	558	16,433	16,000	595	16,595	100,414,981	31.77

	NEW WELLS DRILLED						FOOTAGE DRILLED				AVERAGE HOURLY EARNINGS	
Year	Oil (No.)	Gas* (No.)	Dry (No.)	Service** (No.)	Total (No.)	Percent Dry	Total (Mill. Ft.)	Per Well Drilled	Total Proved Reserves on Dec. 31‡ (Mil. Bbls.)	Total New Reserves Added‡ (Mil. Bbls.)	Crude Oil $ per Hour	All Mfg. Industries $ per Hour
1952	23,466	3,255	17,618	1,482	45,821	38.4	187.2	4,085	32,957	3,306	1.98	1.65
1953	25,762	3,806	18,449	1,262	49,279	37.4	198.8	4,034	34,363	4,040	2.10	1.74
1954	29,773	3,977	19,168	1,012	53,930	35.5	219.0	4,061	34,605	2,960	2.15	1.78
1955	31,567	3,613	20,742	760	56,682	36.6	226.3	3,992	35,451	3,386	2.20	1.86
1956	30,730	4,543	21,838	1,049	58,160	37.5	233.9	4,022	36,337	3,784	2.35	1.95
1957	28,012	4,620	20,983	1,409	55,204	38.1	233.1	4,065	35,987	2,562	2.47	2.05
1958	24,578	4,803	19,043	1,615	50,039	38.1	198.2	3,961	36,740	3,466	2.54	2.11
1959	25,800	5,029	19,265	1,670	51,764	37.2	209.2	4,041	38,241	4,370	2.65	2.19
1960	21,186	5,258	17,584	2,733	46,751	37.6	190.7	4,079	38,429	3,090	2.69	2.26
1961	21,101	5,664	17,106	3,091	46,962	36.4	192.1	4,091	38,835	3,353	2.80	2.32
1962	21,249	5,848	16,682	2,400	46,179	36.1	198.6	4,301	38,101	2,914	2.83	2.39
1963	20,288	4,751	16,347	2,267	46,656	37.4	184.4	4,224	38,644	3,052	2.92	2.46
1964	20,620	4,855	17,488	2,273	45,236	38.7	189.9	4,198	38,738	3,274	2.95	2.53
1965	18,761	4,724	16,025	1,922	41,432	38.7	181.5	4,380	39,376	3,880	3.03	2.61
1966	16,780	4,377	15,227	1,810	38,194	40.2	166.0	4,383	39,781	3,265	3.13	2.72
1967	15,329	3,659	13,246	1,584	33,818	39.2	144.7	4,280	39,991	3,892	3.25	2.83
1968	14,331	3,456	12,812	2,315	32,914	38.9	149.3	4,536	39,305	3,141	3.38	2.94
1969	14,368	4,083	13,736	1,866	34,053	40.3	160.9	4,726	37,775	2,401	3.59	3.19
1970	13,020	3,840	11,260	1,347	29,467	38.2	142.4	4,834	46,704*	12,997*	3.83	3.36
1971	11,858	3,830	10,163	1,449	27,300	37.2	128.3	4,700	45,367	2,665	4.16	3.57
1972	11,306	4,928	11,057	1,464	28,755	38.5	138.4	4,809	43,128	1,796	4.46	3.81
1973	9,902	6,365	10,305	1,010	27,602	37.3	138.9	5,032	41,755	2,555	4.80	4.06
1974	12,784	7,240	11,674	1,195	32,893	35.5	153.8	4,676	40,600	2,614	5.33	4.40
1975	16,408	7,580	13,247	1,862	39,097	3.9	178.5	4,566	38,950	1,937	6.05	4.80
1976	17,059	9,085	13,621	1,690	41,455	32.9	185.3	4,471	39,904	1,919	6.59	5.19
1977	18,912	11,378	14,692	1,497	46,479	31.6	215.0	4,626	37,774	1,431	7.13	5.63
1978	17,775	13,064	16,218	1,456	48,513	33.4	231.4	4,770	38,107	3,179	8.12	6.14
1979	19,383	14,681	15,752	1,447	51,263	30.7	243.2	4,744	36,425	1,960	8.79	6.66
1980	27,026	15,730	18,089	1,617	62,462	29.0	288.9	4,625	36,533	3,814	9.72	7.27
1981	37,671	17,894	22,973	1,999	80,537	28.5	366.2	4,548	N.A.	N.A.	10.81	7.80

NOTES:

†Includes Natural Gas Liquids.
*Includes condensate wells since 1956.
**Includes stratigraphic and core tests.
[1] Includes net processing gain, unaccounted for crude oil and other hydrocarbons.
[2] Includes Alaskan North Slope.
[3] Excludes Imports for U.S. Strategic Storage.

Source: Petroleum Supply, Demand, Crude Oil Value and Crude Oil Price from Energy Information Administration. Wells and Footage Drilled from oil and Gas Journal, A.P.I. and A.A.P.G. Reserves from American Petroleum Institute, American Gas Association and Department of Energy. Average Hourly Earnings from U.S. Bureau of Labor Statistics based on 1972 Standard Industrial Classification.

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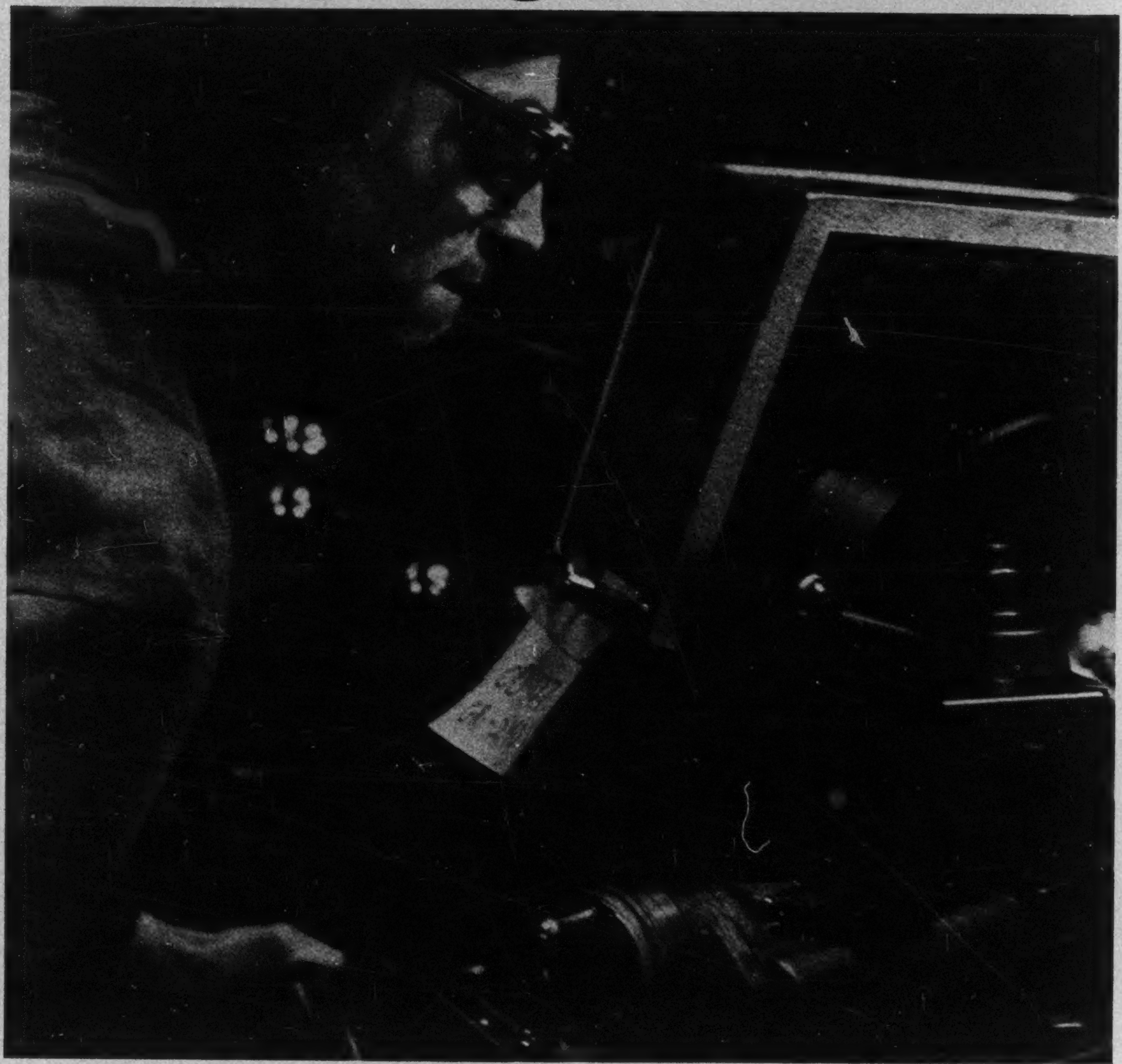

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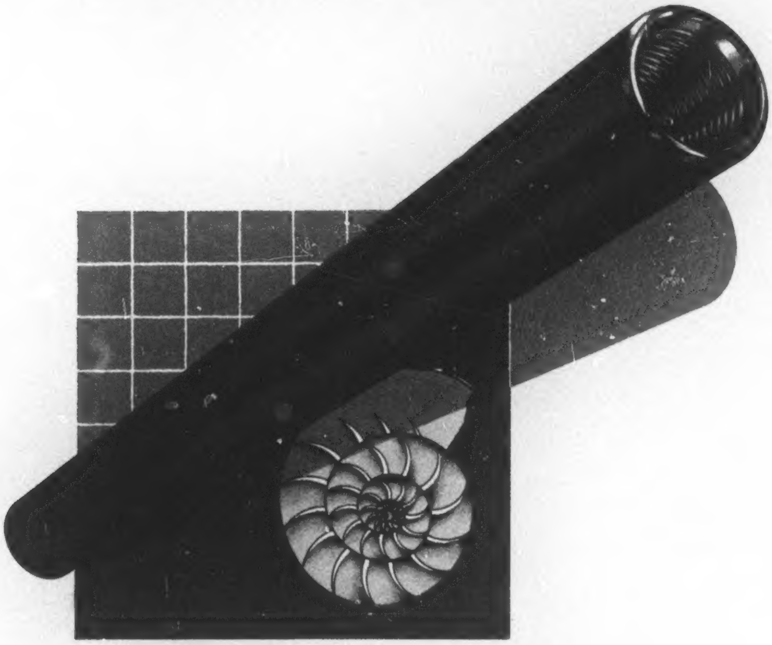

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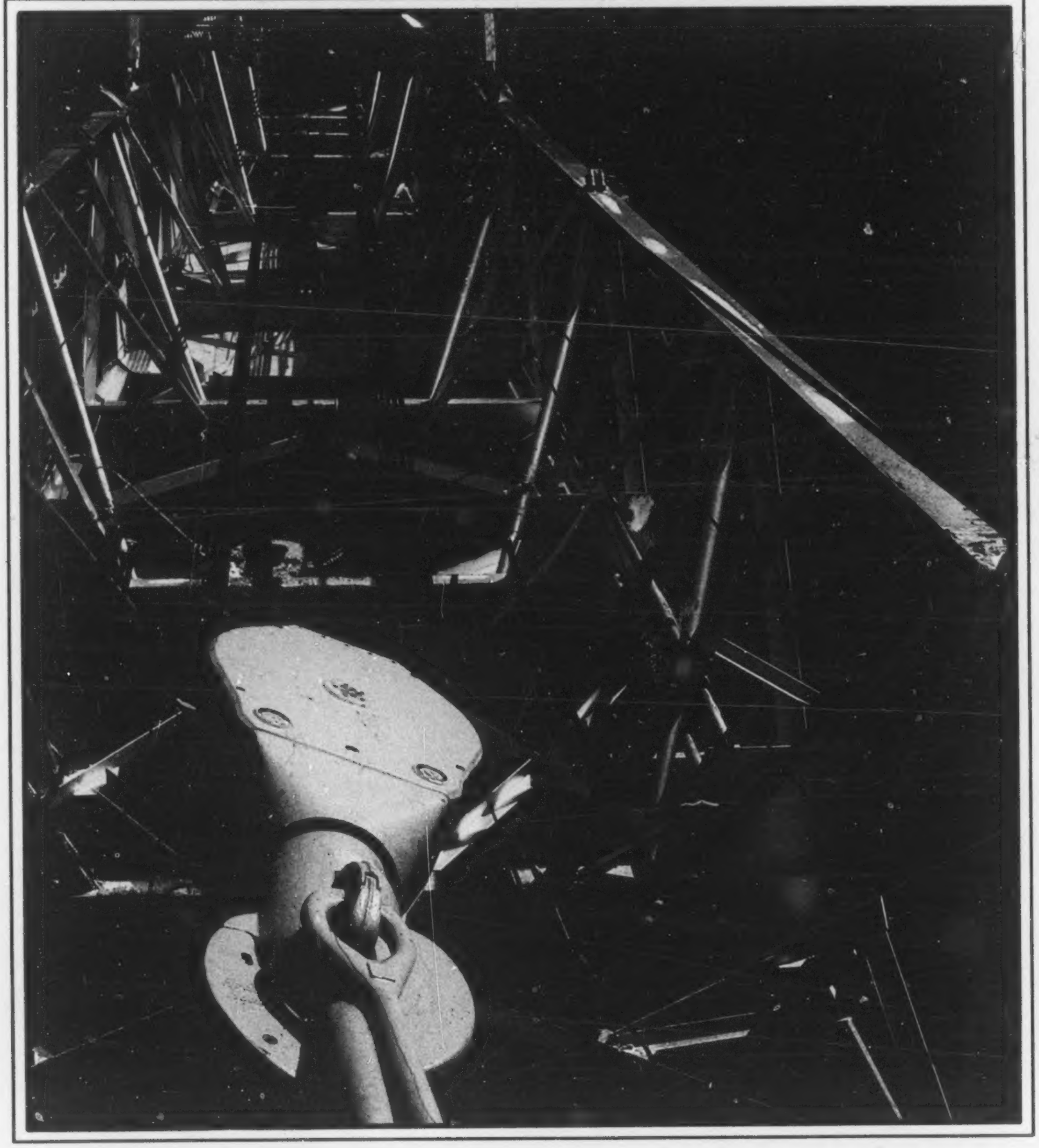

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1983

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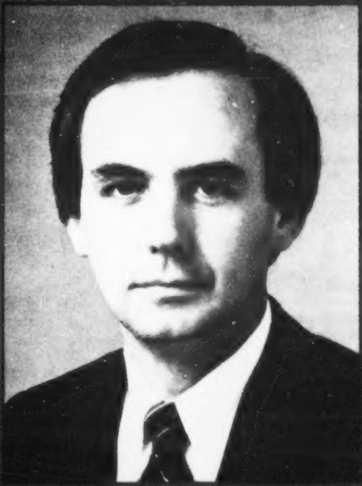

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COVER PHOTOGRAPH

Bruce Wells

Mesnard retiring after 38 years service to oil and gas industry

The 1983 edition of *The Oil Producing Industry in Your State* is the last issue edited by a man who has devoted himself to making the Independent Petroleum Association of America a major source of statistical information on the oil and gas industry. When accuracy counts, and it usually does, the news media, corporations, IPAA members, and many others have known for a long time that Melvin L. Mesnard was the person to contact.

Since joining the association in 1945, Mesnard, who retires in January, has contributed greatly to the IPAA's reputation for knowing the current state of the domestic independent industry. For the producers and consumers who make the statistics that adorn the charts on his office wall, Mesnard's knowledge of oil and gas economics repeatedly has been a valuable asset. Whether read in his "Facts & Forecasts" column in *Petroleum Independent*, or in his monthly "Supply and Demand Report," or heard in person at his committee meetings, Mesnard's understanding of accounting and reporting complexities is well known.

The Oil Daily, which says his "Supply and Demand Report" is "the most carefully read publication in the oil and gas industry," calls Mesnard, "not your usual breed of economist." The newspaper further says, "When confronted with a new set of statistics on how much oil and gas the U.S. is producing, he is the man you go to for explanations."

IPAA Executive Vice President Lloyd Unsell, who first worked with Mesnard as associate editor of this magazine, says he has earned the respect given to him both inside and outside the industry. "Mel has given a lot to the IPAA, and we will always be in debt to him for it," Unsell says. "He has brought the statistics department a long way since first joining the staff, and he has always been a person I've enjoyed working with. Every member of this association wishes him good luck."

THE OIL PRODUCING INDUSTRY IN YOUR STATE
SEPTEMBER 1983

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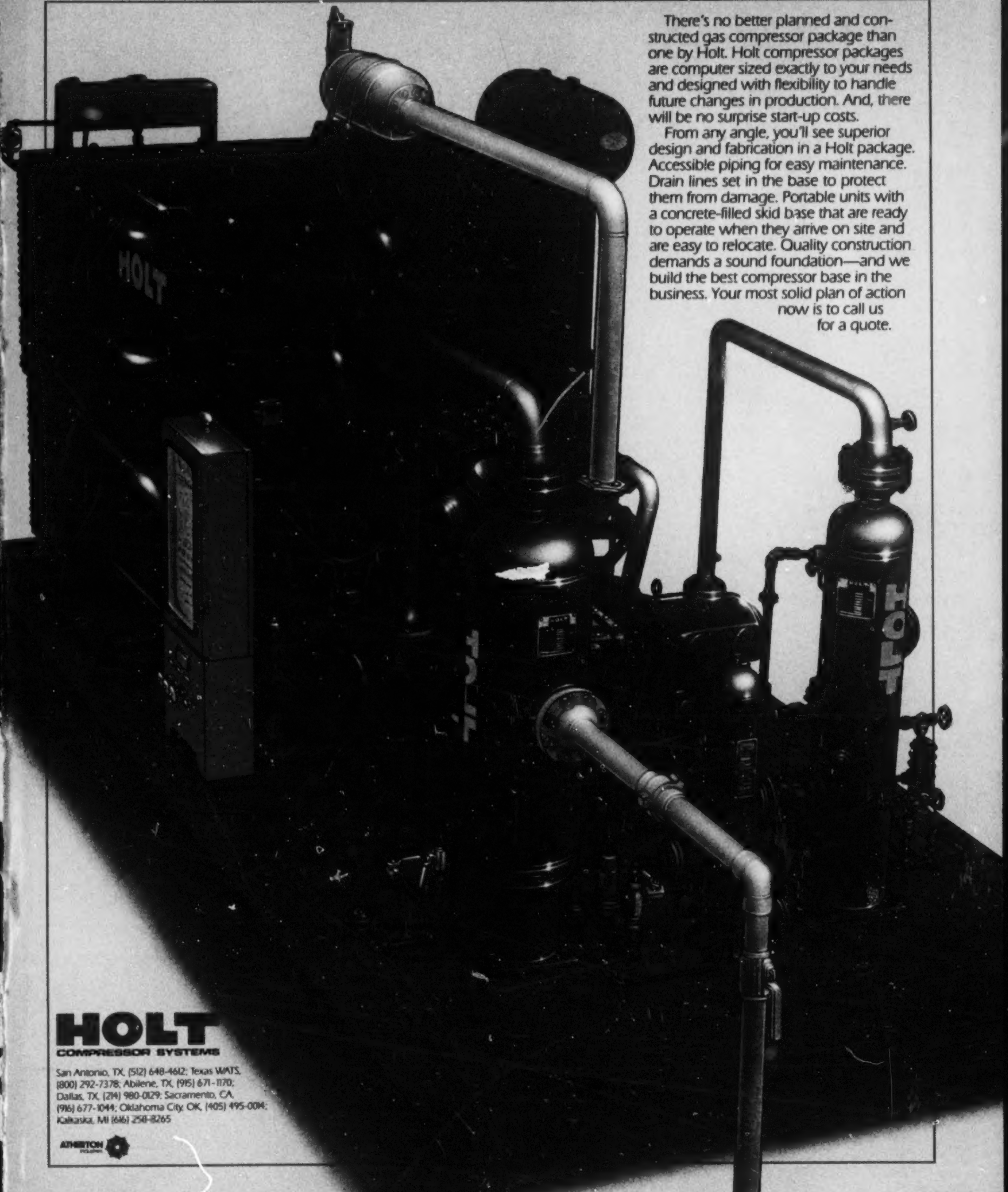

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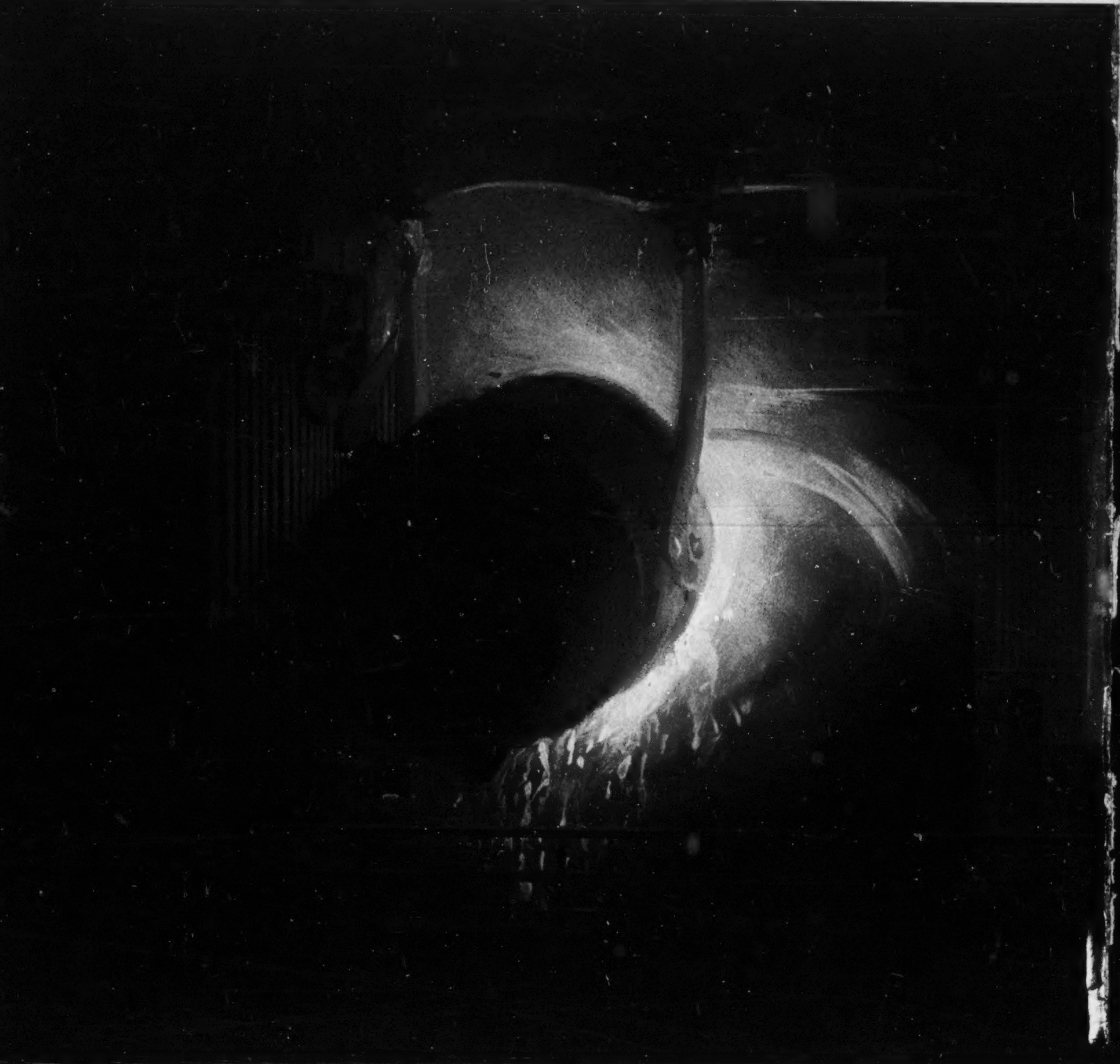

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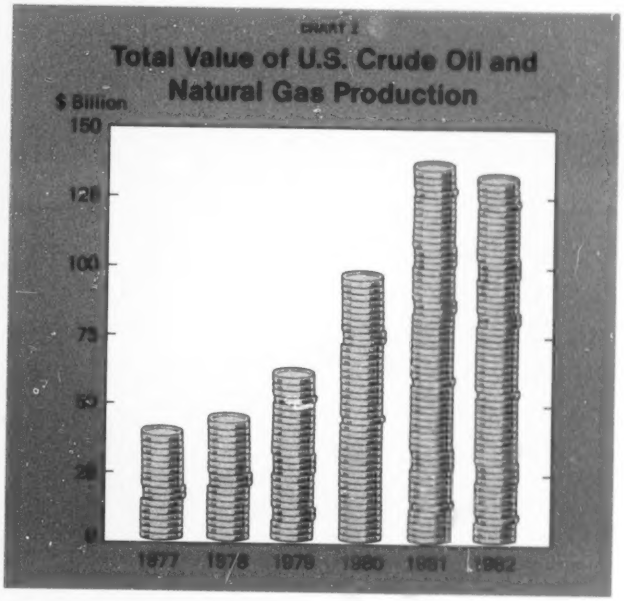
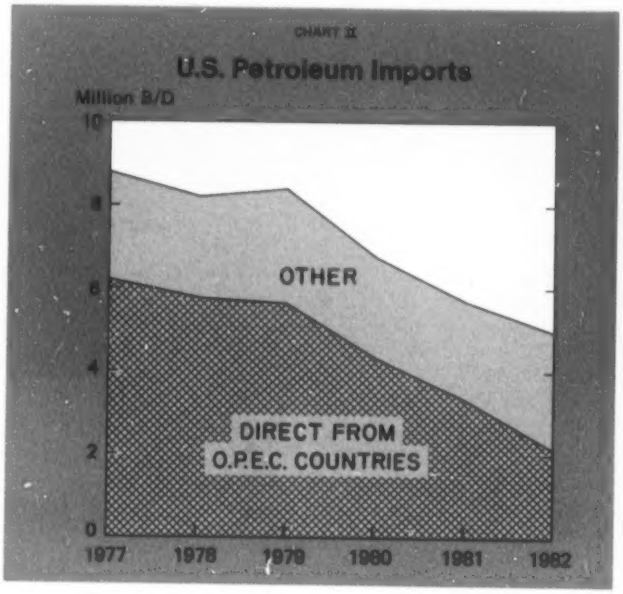
INTRODUCTION

The Oil Producing Industry in Your State is published annually by the Independent Petroleum Association of America to illustrate the importance of oil and gas production to the economies of the 33 individual producing states and the United States as a whole.

Crude petroleum and natural gas are by far the most valuable minerals produced in the United States. As may be noted on the individual state pages, either crude oil or natural gas was ranked first in the total value of mineral production in 17 of the 33 states having oil or gas production. Preliminary figures indicate that the total value of crude oil produced in 1982 was more than $90 billion and natural gas about $44 billion, making a total wellhead value of $134 billion. This is down about $5 billion from the record level established in 1981. Total value for each year since 1977 is shown in Chart I.



In the years since the embargo on oil imports in 1973, the United States has made substantial progress in reducing its dependence on foreign oil. Total imports reached a peak of 8,787,000 barrels per day in 1977. Due largely to conservation efforts, imports have been reduced substantially and averaged only 4,948,000 barrels per day in 1982. This is a reduction of 3,839,000 barrels daily or almost 44 percent in just five years. In 1977, imports accounted for 47.1 percent of our new supply. This dependence was reduced to 32.7 percent in 1982.

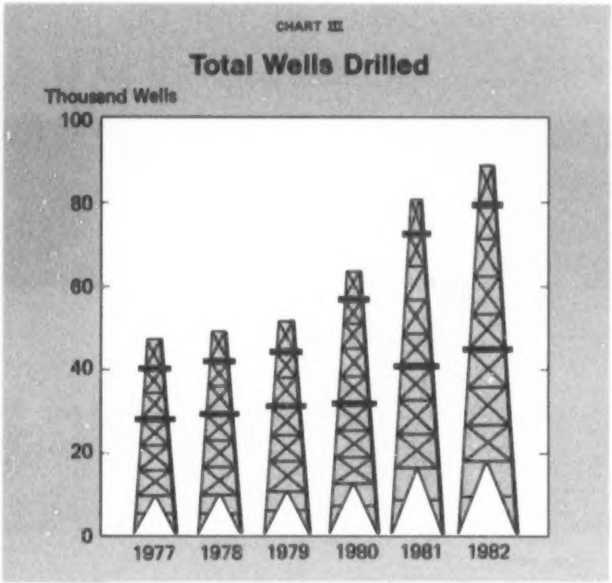


Although a large portion of our reduction in imports has been made possible because of conservation and reduced demand, the domestic petroleum industry has been making a valiant effort to increase production and reserves.

It is significant to note too that all of this reduction in imports has been in our direct imports from O.P.E.C. countries, which fell from 6,195,000 barrels per day in 1977 to 2,113,000 in 1982. This is a reduction of 4,080,000 barrels per day or 66 percent in the five-year period. See Chart II.

Although a large portion of our reduction in imports has been made possible because of conservation and reduced demand, the domestic petroleum industry has been making a valiant effort to increase production and reserves. The number of wells drilled in the search for new oil and gas reserves since the embargo has increased from 27,602 in 1973 to 88,106 wells in 1982. This amounts to an increase of more than 60,000 wells or more than 200 percent since 1973.

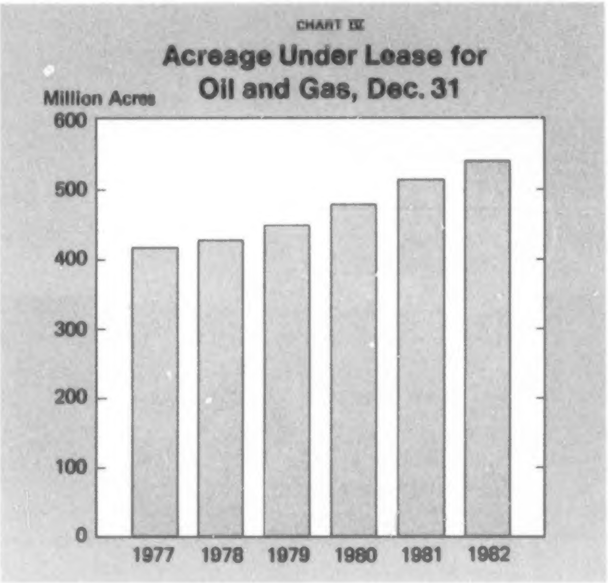
There has been a moderate increase in crude oil production since 1977, but all of the increase is attributable to the Alaskan North Slope. The increased rate of drilling, however, has arrested the decline in lower 48 states' production. If the 1982 rate of drilling could be continued, there is little question but that total production, excluding Alaska, could be increased. Total well completions in the U.S. since 1977 are shown in Chart III.



Statements have been made in recent years that there is no place left to drill for oil and gas in the United States. A survey done annually by the IPAA with regard to acreage under lease in nonproductive areas proves that those statements are completely wrong. Acreage under lease in nonproductive areas on January 1, 1983, totalled more than 469 million acres, equivalent to 20.7 percent of the entire land area of the United States. Somebody is paying rentals on this vast acreage and it is hard to believe that this would continue if people did not believe there was some chance of finding oil or gas. Chart IV shows the steady increase that has been taking place in acreage under lease for oil and gas during the last few years.

Another series of figures collected by IPAA for publication in this book pertains to the total number of employees in various segments of the industry. Although not complete, available data for the more important segments of the industry add to a total of more than 1,733,000 employees. These figures provide another measure of the important contributions made by the petroleum industry to the economies of each of the producing states.

> *These figures provide another measure of the important contributions made by the petroleum industry to the economies of each of the producing states.*



In addition to the above-mentioned statistical series, there are a number of tables in the book which summarize data on production, wells drilled, rotary rigs active, consumption of petroleum products, etc.

It is the hope of IPAA that readers and users of this book will find the data useful as a source of information about the oil and gas producing industry in the U.S. If there are any questions regarding the data, please direct them to the Statistics Department of the association and every effort will be made to provide answers. — **Melvin Mesnard**

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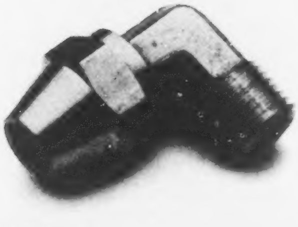

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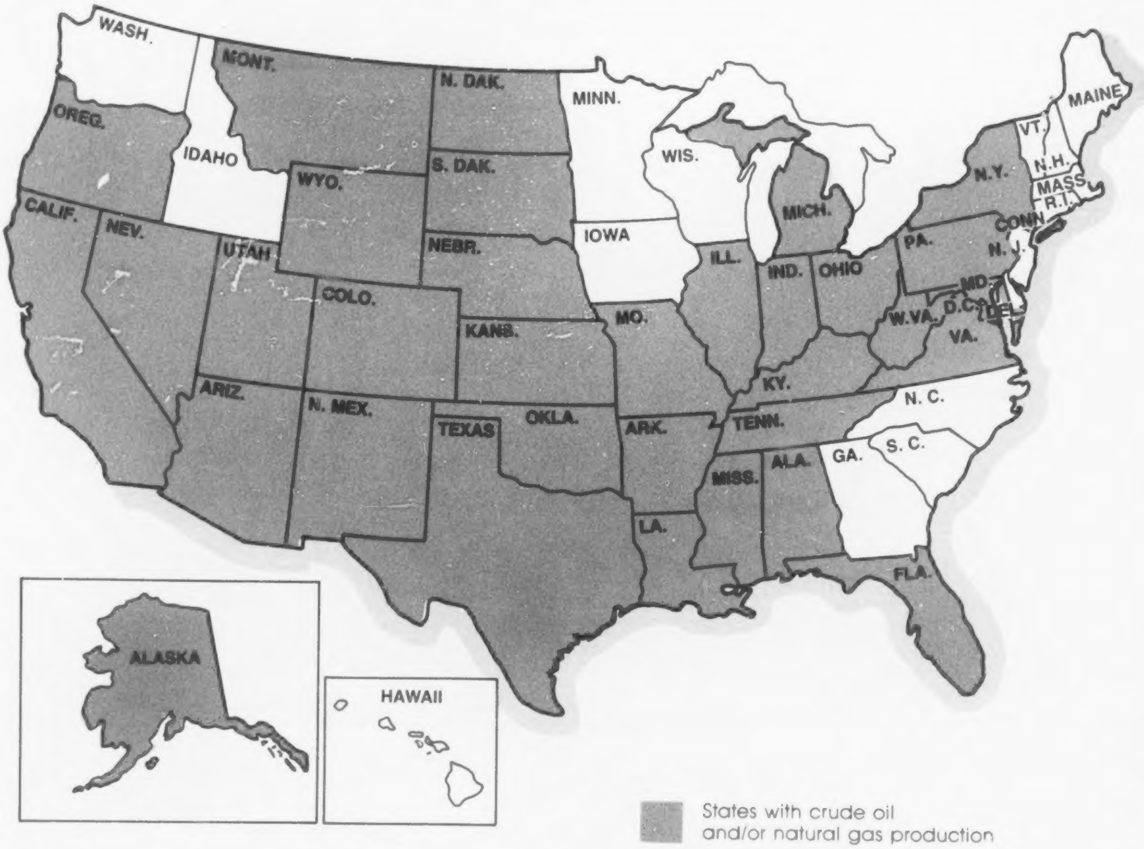
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▨ States with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of states	50
2.	Number of states with crude oil and/or gas production	33
3.	Total land area (acres)	2,263,587,200
4.	Area proved productive of crude oil and/or gas (acres)	69,444,118
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	468,946,485
6.	Percent of total land area productive or leased	20.7%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$673,617,974
8.	Average field price of crude oil per barrel in 1982	$28.52
9.	Wellhead value of crude oil produced in 1982 (thous.)	$90,027,012
10.	Wellhead value of natural gas produced in 1982 (thous.)	$44,429,660
11.	Total wellhead value of oil and gas in 1982 (thous.)	$134,456,672
12.	Percent of petroleum value to total all minerals	81.6%
13.	Principal mineral products in order of value: 1st . . . . Crude oil 2nd . . . . Natural gas 3rd . . . . Coal	
14.	Number of employees engaged in oil and gas production	605,691
15.	First year of crude oil production First year of natural gas production	1859 1881
16.	First recorded production of: Crude oil (barrels) . . . . . in 1859 Natural gas (Mcf) . . . . . in 1881	 2,000 600,000
17.	Geophysical activity — crew months worked in 1982	5,676

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1970
19. Crude oil produced in peak year (barrels) 3,517,450,000
20. Percent of crude oil produced by stripper wells 13.6%
21. Number of producing wells at end of 1982: Crude oil 580,142
    Gas and gas distillate 203,663
    Total 783,805
22. Average daily production of crude oil per well at end of 1982 14.9 b/d
23. Percent of wells on artificial lift... 93.7%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	8,551,534	1,583,625	10,135.159
1980	8,597,046	1,563,525	10,160,571
1981	8,571,573	1,599,600	10,171,173
1982	8,648,526	1,550,400	10,198,926

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found	1,382	874	2,256	18,112
Estimated production	2,950	721	3,671	18,292
Net change in reserves	−1,568	153	−1,415	−180

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found	161,395	28,597	189,992	843,632
Total production	133,537	21,376	154,913	634,378
Proved reserves, Dec. 31, 1982	27,858	7,221	35,079	209,254

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average) 3,105
28. Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas 26,536
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 31,444
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	2,582	15.7
Gas wells	2,265	13.8
Dry holes	11,623	70.5
Total wells	16,470	100.0
Average depth per well (feet)		5,804
Total footage		95,587,432
Development Wells		
Oil wells	37,716	52.6
Gas wells	16,688	23.3
Dry holes	14,926	20.9
Service wells	2,306	3.2
Total wells	71,636	100.0
Average depth per well (feet)		4,270
Total footage		305,896,234
Total Wells		
Oil wells	40,298	45.7
Gas wells	18,953	21.6
Dry holes	26,549	30.1
Service wells	2,306	2.6
Total wells	88,106	100.0
Average depth per well (feet)		4,557
Total footage		401,483,666

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	1,589,763	57.7
Gas wells	317,504	11.5
Dry holes	844,668	30.6
Total wells	2,751,935	100.0

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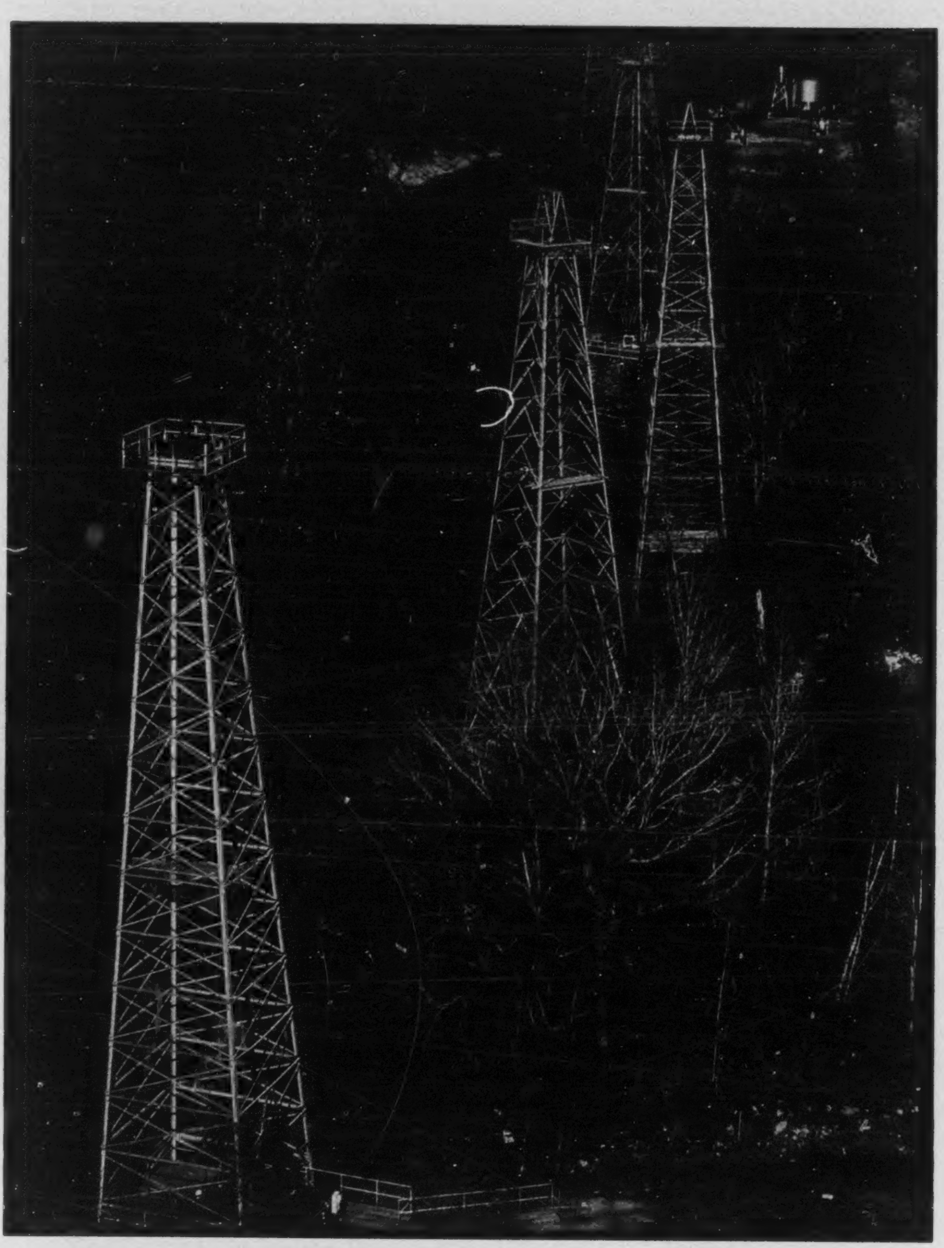

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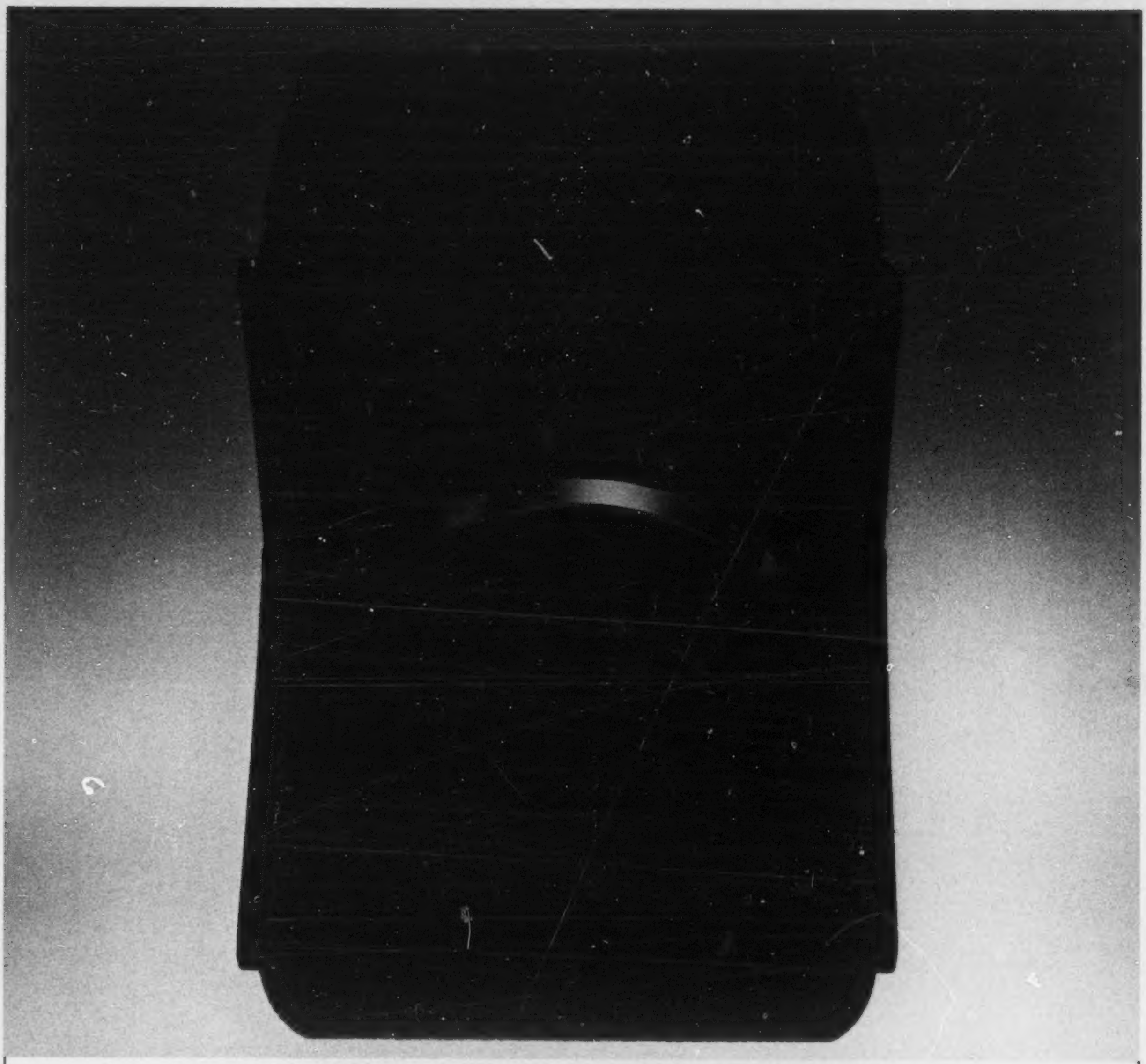

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Newport Steel has the steel production flexibility to help you meet your line pipe and casing pipe requirements, with specialized skills like the ability to metallurgically match your needs to the quality of pipe we will manufacture for you. Interested? Write Mr. Robert Kearns, Manager of Tubular Products at Newport Steel Corporation, 9th and Lowell Street, Newport, Kentucky, 41072, phone 606-292-6818.

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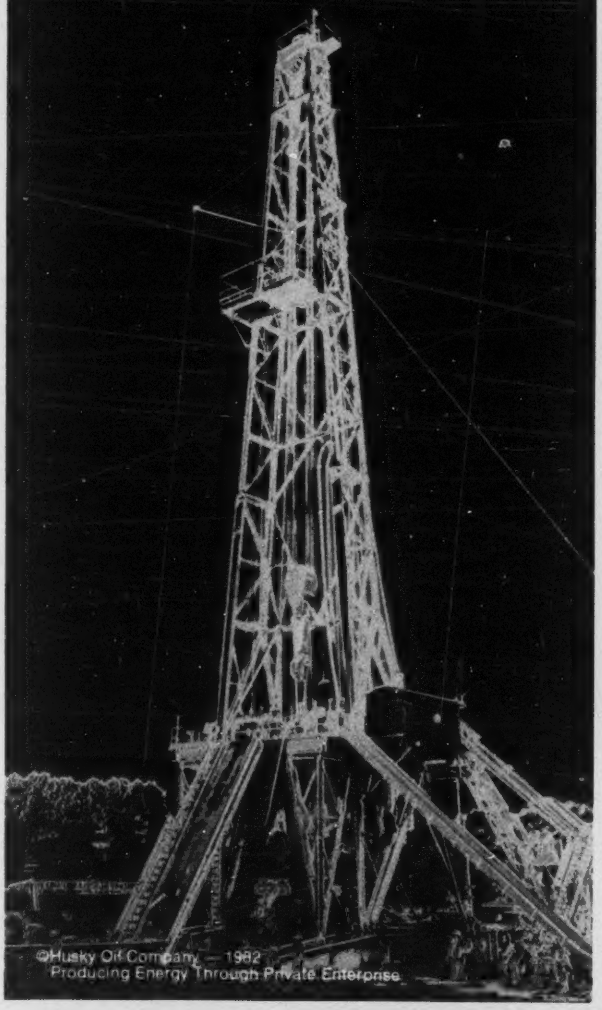

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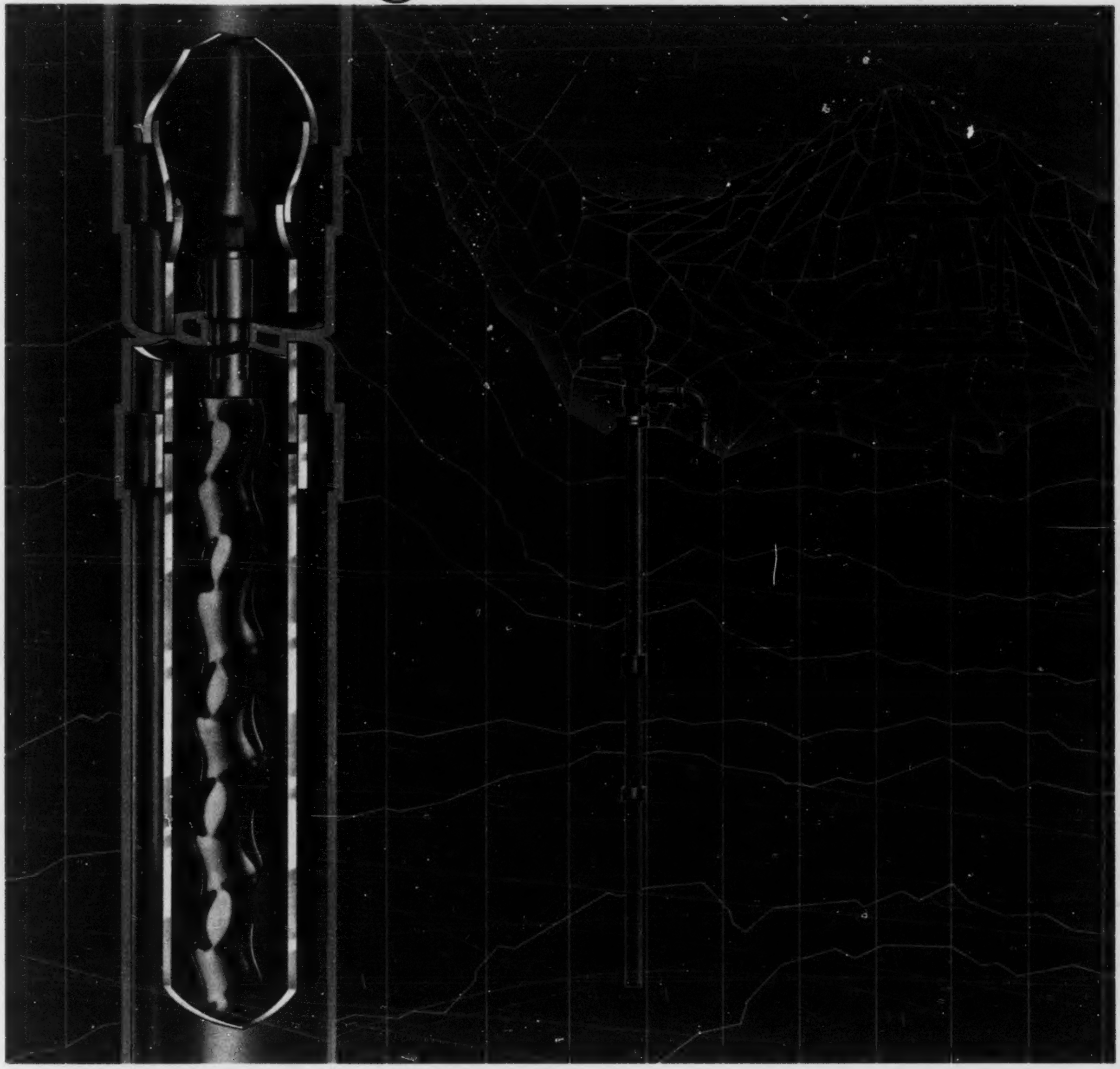
Producing Energy Through Private Enterprise

There's a New Twist in the Underground Movement



THE ECONOLIFT™ PUMP FROM CENTRILIFT-HUGHES

Centrilift-Hughes introduces another reason to join the Underground Movement: The ECONOLIFT Progressing Cavity Pump. Backed by Centrilift-Hughes technology, this new pump solves many of the problems associated with lifting fluids in low volume, shallow wells. The low cost system can make marginal wells profitable. It is easy to install, often using your existing sucker rods. And it is driven by a standard electric motor.

APPLYING A PROVEN PUMPING PRINCIPLE

The ECONOLIFT Progressing Cavity Pump consists of two downhole components: the rotor and the stator. The rotor is a precision machined external helix. It fits inside a synthetic elastomer stator, which is a double internal helix (see the illustration). As the rotor turns, a moving cavity is formed. The well fluid is driven upward in this cavity. The simple, yet rugged system has been used successfully in surface applications for many years.

LIFT ANY FORMATION FLUID

Due to the progressing cavity principle, the new ECONOLIFT Pump can lift virtually any well fluid. It can handle sand, gypsum, salt, paraffin, or heavy crudes. It is ideal for gassy wells, because the progressing cavity pump will not gas lock. The pump also handles changing well conditions and volumes. (Turn the page.)

Econolift™ Progressing Cavity Pumping System

EASY TO INSTALL AND OPERATE

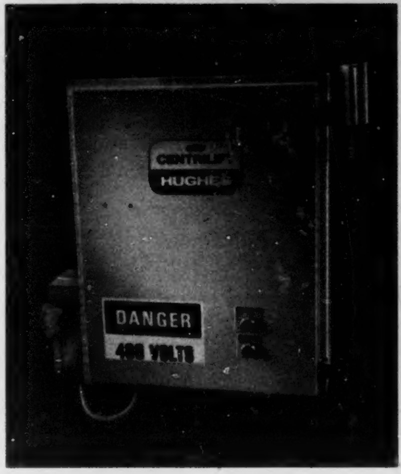
You can install the ECONOLIFT System in just a few hours, using your current sucker rods. The system's low profile drive head is compact and easily protected. It operates silently, driven by economical NEMA type B electric motors. You can fine tune the pump quickly, by changing sheave ratios at the surface. Or with the Centrilift-Hughes Variable Speed Controller, you can dial in the desired production rate.

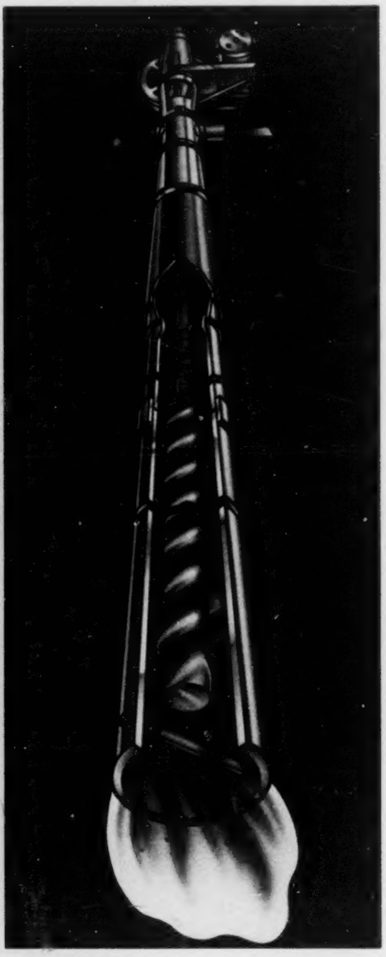
TWO EXAMPLES

Increase Production From 15 BPD to 40 BPD
A well with a setting depth of 1,900 feet, was being pumped with a size 40 beam pumping system. The fluid level was high, but the unit could only lift 15 BPD because the well was producing 12° API crude. The operator installed the ECONOLIFT Pump. It handled the viscous crude easily and raised production to 40 BPD.

Increase Production In Gassy Wells
In three gassy wells, size 80 beam pumping units were producing a total of 18 BPD, with troublesome gas leaks and paraffin build-up. The operator installed ECONOLIFT Pumps with Variable Speed Controllers, using existing rods and tubing. Now two of the wells are steadily producing 50 BPD each and the third is profitably producing 5 BPD.

The ECONOLIFT Progressing Cavity Pumping System has proven effective in many installations. You'll find more case histories in our new brochure.





JOIN THE UNDERGROUND MOVEMENT TODAY

CALL TERRY HUGHES
AT 1-800-331-5562
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The ECONOLIFT Progressing Cavity Pumping System is just one more part of the Centrilift-Hughes System. Call today and find out how it can work for you. Ask for our new ECONOLIFT Pumping System brochure, too.

The Centrilift-Hughes System Works

CENTRILIFT
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"Investing in your own production equipment can be a merry-go-round… and round… with your capital."

Allan Fullerton
Division Manager
Halliburton Resource Management
Oklahoma City, Oklahoma

"We've seen it happen a lot. A company will invest a small fortune in production equipment, planning for one capacity. Then their production rates change… and they find themselves with their capital tied up in the wrong size equipment, needing more money for the right size and to keep on drilling. It's a vicious circle.

"When we show them how HRM's rental service for production equipment can keep them flexible, so they can change equipment as their production needs change, they kick themselves for not coming to us in the first place. They pay a simple monthly rental fee that keeps their capital flexible, for more drilling or whatever. And, as we've been saying for years, the rental equipment fees go on the books as a *pre-tax* expense item."

There are many ways Halliburton Resource Management can get you off the merry-go-round. We provide an engineering staff well qualified to suggest the right production equipment. Those suggestions are based on both technical needs *and* economic considerations to help make sure you get the most efficiency for your well—initially and when production rates change.

And our customers have found that in addition to freed capital and pre-tax expense advantages, HRM actually *saved* them money over capital equipment ownership costs.

We can normally provide on a monthly rental basis, pumping units, prime movers, separators, treaters, storage equipment, dehydrators, waterflood and disposal equipment, and other major equipment required for your project. It's all available from huge inventories, so we can meet almost any need, almost immediately.

HRM also offers compression equipment and services on a straight rental basis or with a lease/purchase option. And gas processing and conditioning facilities are available on a service-fee basis.

We can show you how we help free your capital so you can drill more wells. Just contact us at the address listed below.

We help you
conserve capital for
what you do best.

HRM

Halliburton Resource Management

A Halliburton Company

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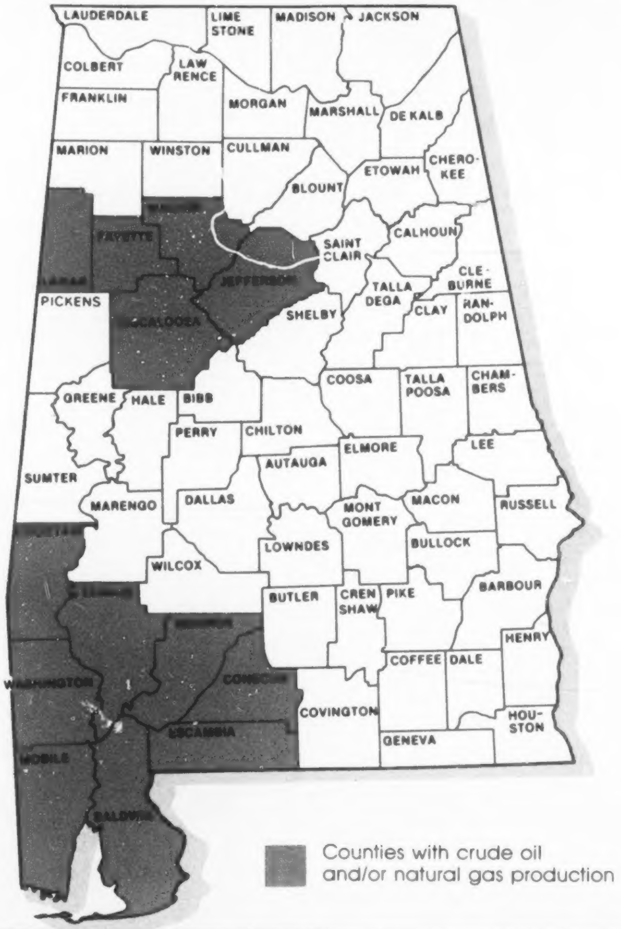
ALABAMA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▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	67
2.	Number of counties with crude oil and/or gas production	13
3.	Total land area (acres)	32,453,120
4.	Area proved productive of crude oil and/or gas (acres)	227,040
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	9,070,899
6.	Percent of total land area productive or leased	28.7%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$3,233,788
8.	Average field price of crude oil per barrel in 1982	$32.32
9.	Wellhead value of crude oil produced in 1982 (thous.)	$646,852
10.	Wellhead value of natural gas produced in 1982 (thous.)	$376,815
11.	Total wellhead value of oil and gas in 1982 (thous.)	$1,023,667
12.	Percent of petroleum value to total all minerals	43.6%
13.	Principal mineral products in order of value: 1st . . . . . Coal 2nd . . . . . Crude oil 3rd . . . . . Natural gas	
14.	Number of employees engaged in oil and gas production	1,954
15.	First year of crude oil production	1944
	First year of natural gas production	1904
16.	First recorded production of:	
	Crude oil (barrels) . . . . . in 1944	43,000
	Natural gas (Mcf) . . . . . in 1953	5,000
17.	Geophysical activity — crew months worked in 1982	116

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1980
19. Crude oil produced in peak year (barrels) 22,153,000
20. Percent of crude oil produced by stripper wells 0.5%
21. Number of producing wells at end of 1982: Crude oil 719
    Gas and gas distillate 461
    Total 1,180
22. Average daily production of crude oil per well at end of 1982 77.1 b/d
23. Percent of wells on artificial lift ... 83%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	52,496	9,588*	62,084
1980	60,527	9,400*	69,927
1981	56,658	9,500*	66,158
1982	54,833	9,000*	63,883

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	6	17	23	100
Estimated production	7	16	23	87
Net change in reserves	−1	1	0	13

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	288	285	573	1,186
Total production	234	92	326	490
Proved reserves, Dec. 31, 1982	54	193	247	696

EXPLORATION AND DEVELOPMENT

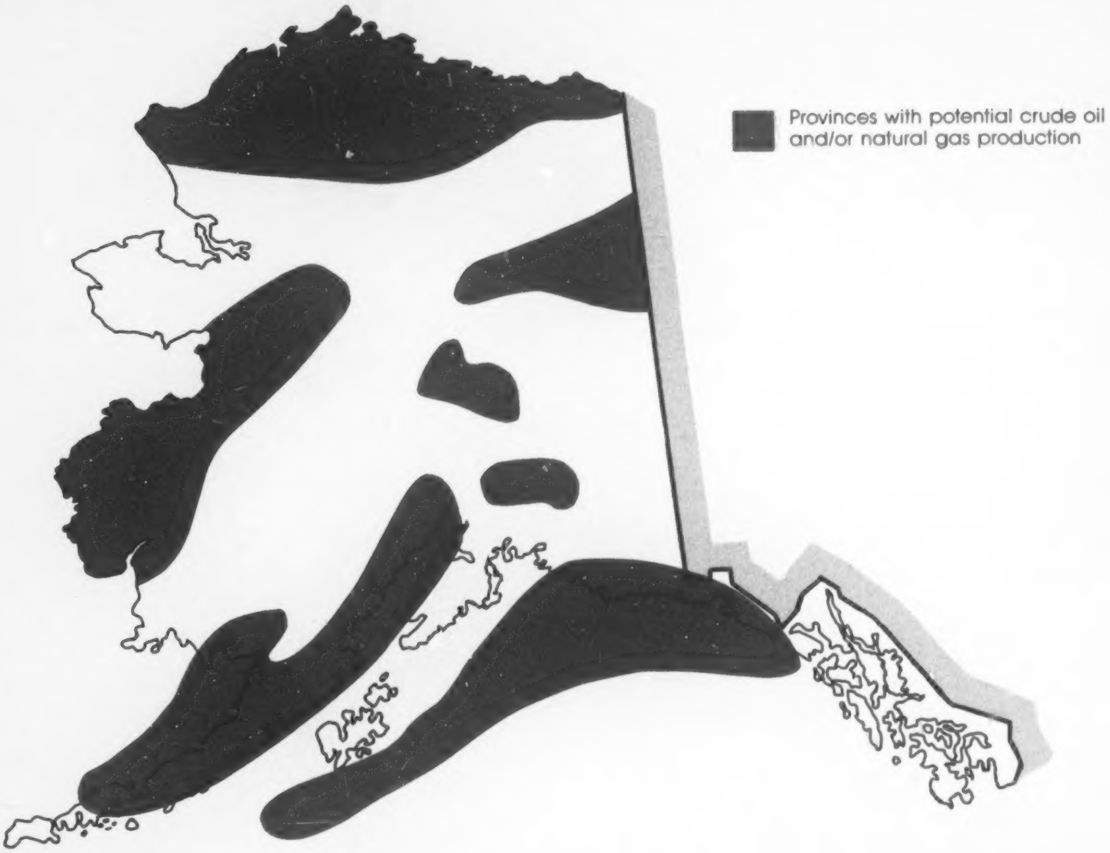
27. Rotary drilling rigs active in 1982 (average) 15
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Natural gas 21,650
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 21,859
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	2	2.9
Gas wells	9	12.9
Dry holes	59	84.2
Total wells	70	100.0
Average depth per well (feet)		8,177
Total footage		572,423
Development Wells		
Oil wells	22	16.1
Gas wells	54	39.4
Dry holes	57	41.6
Service wells	4	2.9
Total wells	137	100.0
Average depth per well (feet)		5,910
Total footage		809,656
Total Wells		
Oil wells	24	11.7
Gas wells	63	30.4
Dry holes	116	56.0
Service wells	4	1.9
Total wells	207	100.0
Average depth per well (feet)		6,677
Total footage		1,382,079

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	826	24.4
Gas wells	510	15.1
Dry holes	2,045	60.5
Total wells	3,381	100.0

ALASKA


▨ Provinces with potential crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	Not Applicable
2.	Number of counties with crude oil and/or gas production	Not Applicable
3.	Total land area (acres)	362,516,480
4.	Area proved productive of crude oil and/or gas (acres)	459,060
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	5,005,095
6.	Percent of total land area productive or leased	1.5%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$37,850,780
8.	Average field price of crude oil per barrel in 1982	$20.10
9.	Wellhead value of crude oil produced in 1982 (thous.)	$12,440,091
10.	Wellhead value of natural gas produced in 1982 (thous.)	$267,330
11.	Total wellhead value of oil and gas in 1982 (thous.)	$12,707,421
12.	Percent of petroleum value to total all minerals	98.8%
13.	Principal mineral products in order of value: 1st . . . . Crude oil 2nd . . . . Natural gas 3rd . . . . Sand and gravel	
14.	Number of employees engaged in oil and gas production	7,772
15.	First year of crude oil production	1905
	First year of natural gas production	1945
16.	First recorded production of: Crude oil (barrels) . . . . . in 1921 Natural gas (Mcf) . . . . . in 1959	 10 135,000
17.	Geophysical activity — crew months worked in 1982	129

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1980
19.	Crude oil produced in peak year (barrels)	591,684,000
20.	Percent of crude oil produced by stripper wells	Not Available
21.	Number of producing wells at end of 1982: Crude oil	760
	Gas and gas distillate	123
	Total	883
22.	Average daily production of crude oil per well at end of 1982	2,227.2 b/d
23.	Percent of wells on artificial lift ...	56.5%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	1,400,918	1,644*	1,402,562
1980	1,616,519	1,300*	1,617,819
1981	1,609,142	1,300*	1,610,442
1982	1,695,644	1,300*	1,696,944

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	−250	−1	−251	2,215
Estimated production	627	0	627	262
Net change in reserves	−877	−1	−878	1,953

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	11,091	17	11,108	37,631
Total production	3,685	8	3,693	2,629
Proved reserves, Dec. 31, 1982	7,406	9	7,415	35,002

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	22
28.	Deepest producing well drilled to Jan. 1, 1983 (feet) ... Natural gas	14,996
29.	Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	20,335

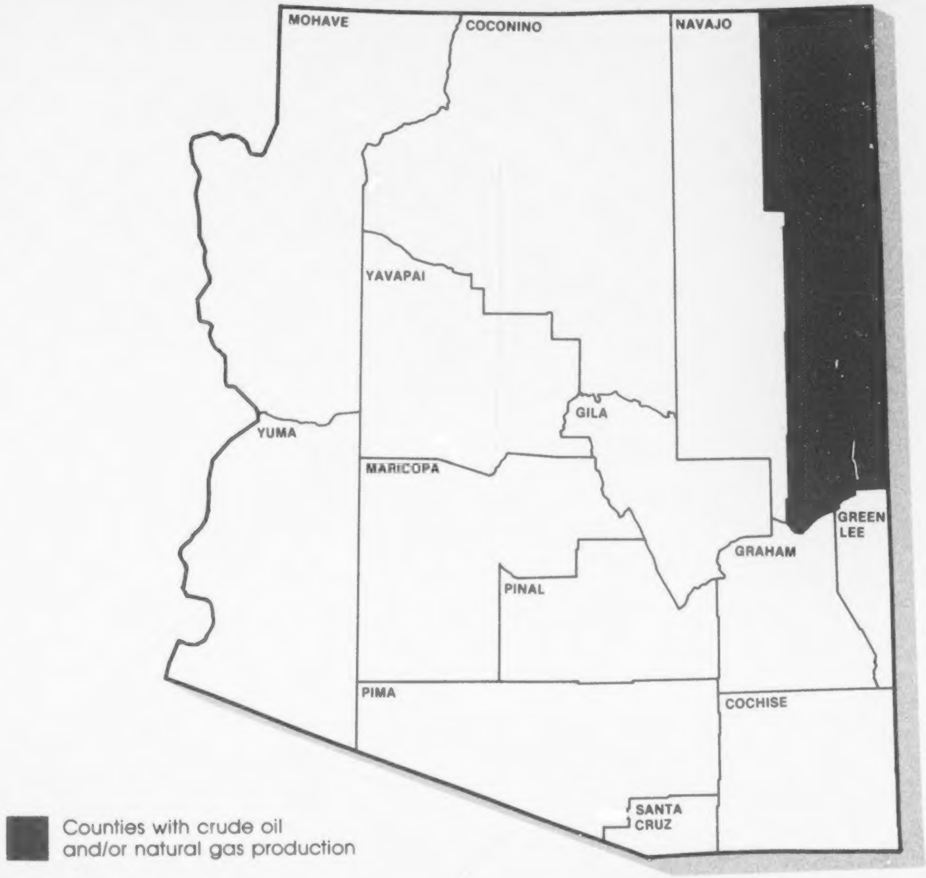
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	2	25.0
Gas wells	0	0
Dry holes	6	75.0
Total wells	8	100.0
Average depth per well (feet)		12,055
Total footage		96,437
Development Wells		
Oil wells	176	90.3
Gas wells	10	5.1
Dry holes	4	2.1
Service wells	5	2.5
Total wells	195	100.0
Average depth per well (feet)		9,729
Total footage		1,897,076
Total Wells		
Oil wells	178	87.7
Gas wells	10	4.9
Dry holes	10	4.9
Service wells	5	2.5
Total wells	203	100.0
Average depth per well (feet)		9,820
Total footage		1,993,513

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	1,055	65.0
Gas wells	113	7.0
Dry holes	456	28.0
Total wells	1,624	100.0

ARIZONA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SANTA CRUZ
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	14
2. Number of counties with crude oil and/or gas production	1
3. Total land area (acres)	72,586,880
4. Area proved productive of crude oil and/or gas (acres)	7,200
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	22,011,000
6. Percent of total land area productive or leased	30.3%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$62,489
8. Average field price of crude oil per barrel in 1982	$31.00*
9. Wellhead value of crude oil produced in 1982 (thous.)	$1,040
10. Wellhead value of natural gas produced in 1982 (thous.)	Not Available
11. Total wellhead value of oil and gas in 1982 (thous.)	$1,040
12. Percent of petroleum value to total all minerals	0.04%
13. Principal mineral products in order of value:	
1st . . . . Copper	
2nd . . . . Coal	
3rd . . . . Molybdenum	
14. Number of employees engaged in oil and gas production	217
15. First year of crude oil production	1954
First year of natural gas production	1955
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1958	12,000
Natural gas (Mcf) . . . . . in 1958	36,000
17. Geophysical activity — crew months worked in 1982	9

*Estimated

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1968
19. Crude oil produced in peak year (barrels) 3,370,000
20. Percent of crude oil produced by stripper wells 6.3%
21. Number of producing wells at end of 1982: Crude oil 36
22. Average daily production of crude oil per well at end of 1982 27.8 b/d
23. Percent of wells on artificial lift ... 100%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	1,293	0*	1,293
1980	1,109	0*	1,109
1981	978	0*	978
1982	918	0*	918

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found				
Estimated production		Not Available		
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found				
Total production		Not Available		
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

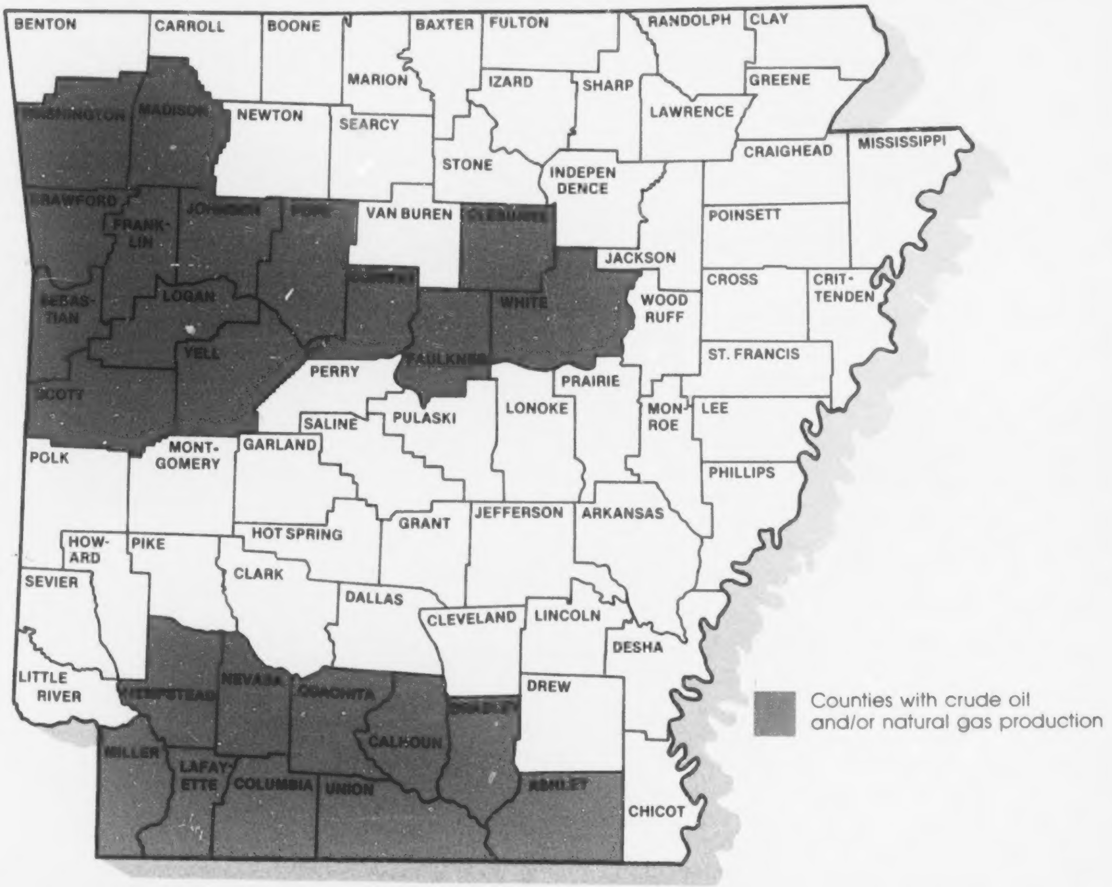
27. Rotary drilling rigs active in 1982 (average) 1
28. Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil 6,793
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 18,013
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	1	16.7
Gas wells	0	0
Dry holes	5	83.3
Total wells	6	100.0
Average depth per well (feet)		3,381
Total footage		20,287
Development Wells		
Oil wells	6	60.0
Gas wells	0	0
Dry holes	2	20.0
Service wells	2	20.0
Total wells	10	100.0
Average depth per well (feet)		4,821
Total footage		48,205
Total Wells		
Oil wells	7	43.8
Gas wells	0	0
Dry holes	7	43.8
Service wells	2	12.4
Total wells	16	100.0
Average depth per well (feet)		4,281
Total footage		68,492

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	53	11.5
Gas wells	34	7.4
Dry holes	374	81.1
Total wells	461	100.0

ARKANSAS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DESHA
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NEVADA
OUACHITA
DREW
BRADLEY
CALHOUN
MILLER
LAFAY-ETTE
COLUMBIA
UNION
ASHLEY
CHICOT
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	75
2. Number of counties with crude oil and/or gas production	24
3. Total land area (acres)	33,244,800
4. Area proved productive of crude oil and/or gas (acres)	1,168,700
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	10,918,210
6. Percent of total land area productive or leased	36.4%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$5,310,034
8. Average field price of crude oil per barrel in 1982	$30.12*
9. Wellhead value of crude oil produced in 1982 (thous.)	$567,732
10. Wellhead value of natural gas produced in 1982 (thous.)	$207,450
11. Total wellhead value of oil and gas in 1982 (thous.)	$775,182
12. Percent of petroleum value to total all minerals	72.8%
13. Principal mineral products in order of value:	
1st . . . . Crude petroleum	
2nd . . . . Natural gas	
3rd . . . . Crushed stone	
14. Number of employees engaged in oil and gas production	4,240
15. First year of crude oil production	1921
First year of natural gas production	1889
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1921	10,473,000
Natural gas (Mcf) . . . . . in 1906	21
17. Geophysical activity — crew months worked in 1982	117

*Estimated

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1925
19.	Crude oil produced in peak year (barrels)	77,398,000
20.	Percent of crude oil produced by stripper wells	29.7%
21.	Number of producing wells at end of 1982: Crude oil	8,629
	Gas and gas distillate	1,679
	Total	10,308
22.	Average daily production of crude oil per well at end of 1982	5.9 b/d
23.	Percent of wells on artificial lift	97.9%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	51,696	2,740*	54,436
1980	49,754	3,000*	52,754
1981	50,279	3,000*	53,279
1982	51,641	3,000*	54,641

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	10	0	10	312
Estimated production	16	1	17	159
Net change in reserves	−6	−1	−7	153

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	1,641	92	1,733	5,866
Total production	1,534	77	1,611	3,892
Proved reserves, Dec. 31, 1982	107	15	122	1,974

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	27
28.	Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas	11,195
29.	Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	17,349

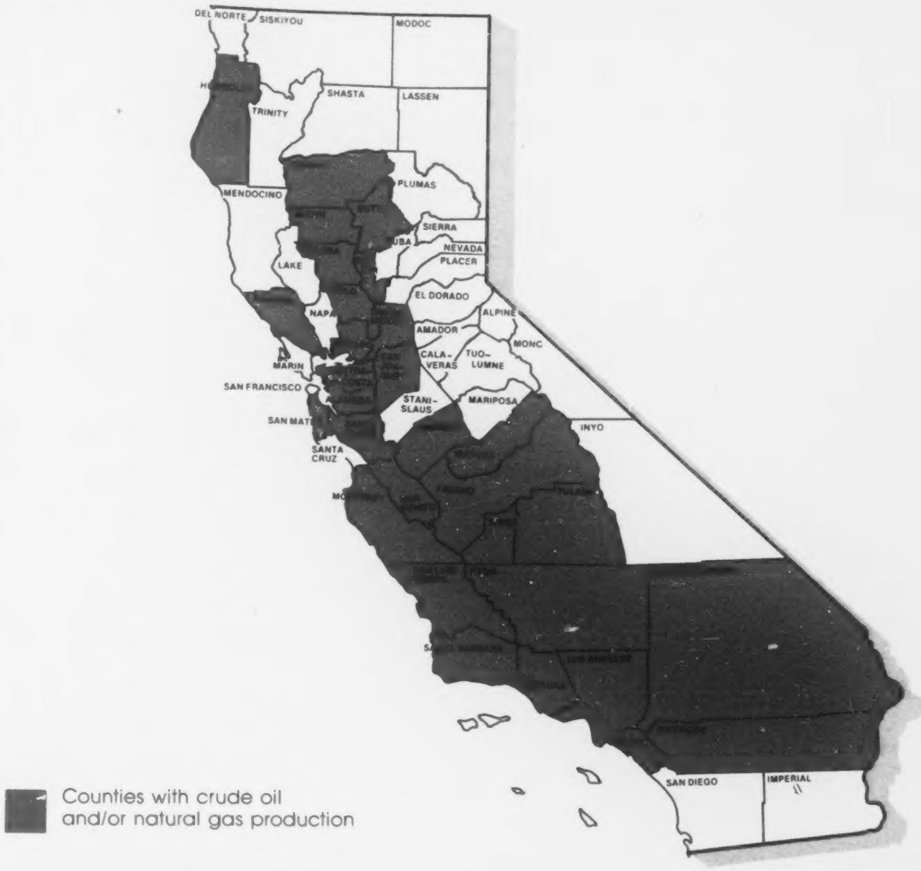
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	6	4.7
Gas wells	7	5.5
Dry holes	114	89.8
Total wells	127	100.0
Average depth per well (feet)		6,208
Total footage		788,466
Development Wells		
Oil wells	292	43.6
Gas wells	157	23.5
Dry holes	203	30.3
Service wells	17	2.6
Total wells	669	100.0
Average depth per well (feet)		4,657
Total footage		3,115,821
Total Wells		
Oil wells	298	37.4
Gas wells	164	20.6
Dry holes	317	39.8
Service wells	17	2.2
Total wells	796	100.0
Average depth per well (feet)		4,905
Total footage		3,904,287

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	16,582	54.4
Gas wells	2,578	8.5
Dry holes	11,346	37.1
Total wells	30,506	100.0

CALIFORNIA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STANI-
SLAUS
MARIPOSA
SAN MATEO
INYO
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CRUZ
SAN DIEGO
IMPERIAL
Counties with crude oil
and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	58
2. Number of counties with crude oil and/or gas production	30
3. Total land area (acres)	100,071,040
4. Area proved productive of crude oil and/or gas (acres)	608,646
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	5,409,913
6. Percent of total land area productive or leased	6%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$72,472,413
8. Average field price of crude oil per barrel in 1982	$24.48
9. Wellhead value of crude oil produced in 1982 (thous.)	$9,830,482
10. Wellhead value of natural gas produced in 1982 (thous.)	$1,095,650

11. Total wellhead value of oil and gas in 1982 (thous.)	$10,926,132
12. Percent of petroleum value to total all minerals	84.7%
13. Principal mineral products in order of value: 1st . . . . Crude oil 2nd . . . . Natural gas 3rd . . . . Portland cement	
14. Number of employees engaged in oil and gas production	40,416
15. First year of crude oil production	1861
First year of natural gas production	1889
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1876	12,000
Natural gas (Mcf) . . . . . in 1906	153,000
17. Geophysical activity — crew months worked in 1982	221

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1982
19.	Crude oil produced in peak year (barrels)	384,958,000
20.	Percent of crude oil produced by stripper wells	14.2%
21.	Number of producing wells at end of 1982: Crude oil	47,231
	Gas and gas distillate	1,050
	Total	48,281
22.	Average daily production of crude oil per well at end of 1982	23.3 b/d
23.	Percent of wells on artificial lift	96.8%

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	965,118	23,014*	988,132
1980	975,199	19,500*	994,699
1981	1,054,679	19,000*	1,073,679
1982	1,100,197	17,500*	1,117,697

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	358	84	442	403
Estimated production	394	12	406	370
Net change in reserves	−36	72	36	33

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	24,973	1,316	26,289	35,353
Total production	19,568	1,162	20,730	29,606
Proved reserves, Dec. 31, 1982	5,405	154	5,559	5,747

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	129
28.	Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil	18,060
29.	Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole	22,711

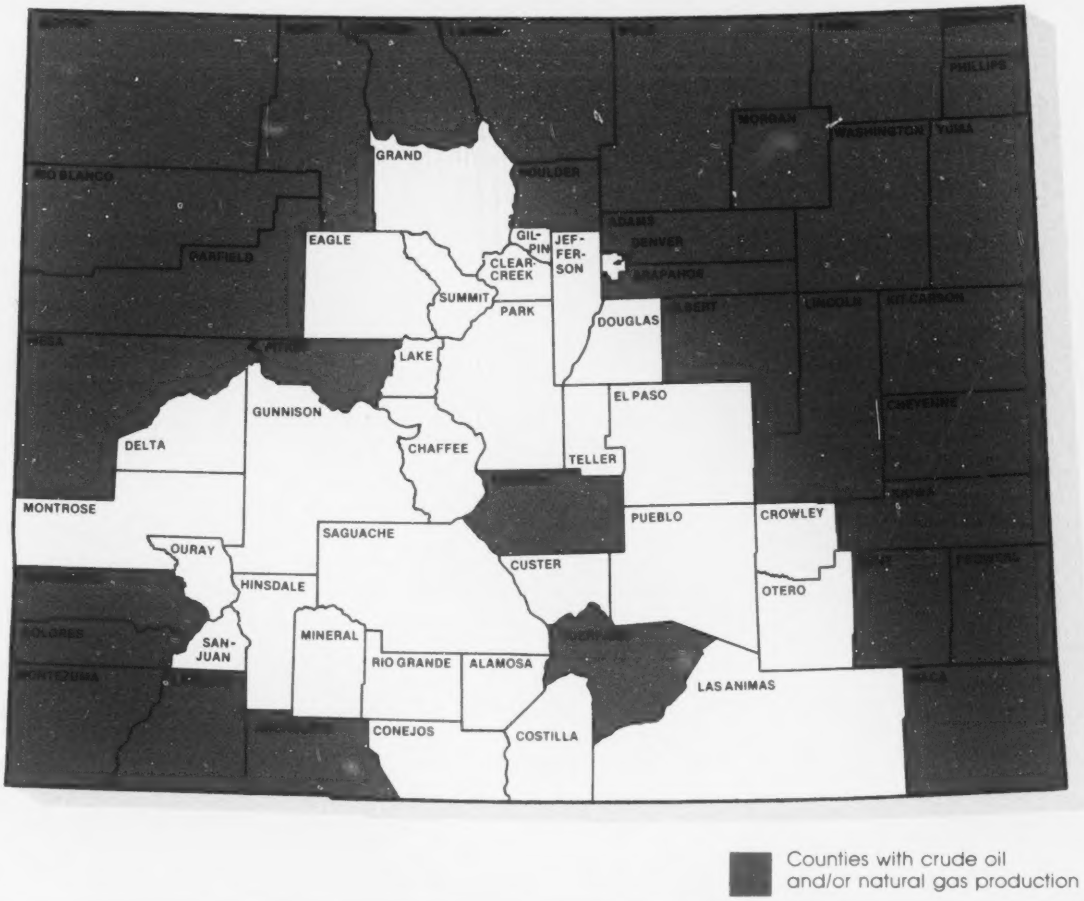
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	141	28.8
Gas wells	59	12.1
Dry holes	289	59.1
Total wells	489	100.0
Average depth per well (feet)		6,246
Total footage		3,054,304
Development Wells		
Oil wells	2,101	79.0
Gas wells	50	1.9
Dry holes	63	2.4
Service wells	444	16.7
Total wells	2,658	100.0
Average depth per well (feet)		2,450
Total footage		6,512,374
Total Wells		
Oil wells	2,242	71.2
Gas wells	109	3.5
Dry holes	352	11.2
Service wells	444	14.1
Total wells	3,147	100.0
Average depth per well (feet)		3,040
Total footage		9,566,588

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	97,873	77.5
Gas wells	2,934	2.3
Dry holes	25,516	20.2
Total wells	126,323	100.0

COLORADO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OTERO
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DOLORES
SAN-JUAN
MINERAL
RIO GRANDE
ALAMOSA
MONTEZUMA
LAS ANIMAS
BACA
CONEJOS
COSTILLA

■ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	63
2.	Number of counties with crude oil and/or gas production	33
3.	Total land area (acres)	66,410,240
4.	Area proved productive of crude oil and/or gas (acres)	1,334,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	30,243,000
6.	Percent of total land area productive or leased	47.5%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$7,790,530
8.	Average field price of crude oil per barrel in 1982	$31.57
9.	Wellhead value of crude oil produced in 1982 (thous.)	$964,306
10.	Wellhead value of natural gas produced in 1982 (thous.)	$495,550
11.	Total wellhead value of oil and gas in 1982 (thous.)	$1,459,856
12.	Percent of petroleum value to total all minerals	51.2%
13.	Principal mineral products in order of value: 1st . . . . Crude oil 2nd . . . . Molybdenum 3rd . . . . Natural gas	
14.	Number of employees engaged in oil and gas production	29,300
15.	First year of crude oil production	1862
	First year of natural gas production	1893
16.	First recorded production of:	
	Crude oil (barrels) . . . . . in 1862	50
	Natural gas (Mcf) . . . . . in 1906	23
17.	Geophysical activity — crew months worked in 1982	141

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1956
19.	Crude oil produced in peak year (barrels)	58,156,000
20.	Percent of crude oil produced by stripper wells	7.1%
21.	Number of producing wells at end of 1982: Crude oil	3,113
	Gas and gas distillate	3,667
	Total	6,780
22.	Average daily production of crude oil per well at end of 1982	27 b/d
23.	Percent of wells on artificial lift...	92.9%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	88,559	25,205*	113,764
1980	81,426	26,000*	107,426
1981	83,022	29,000*	112,022
1982	83,685	30,000*	113,685

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	52	−7	45	534
Estimated production	30	11	41	211
Net change in reserves	22	−18	4	323

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	1,518	327	1,845	7,454
Total production	1,349	141	1,490	3,903
Proved reserves, Dec. 31, 1982	169	186	355	3,551

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	60
28.	Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas	17,632
29.	Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	19,710

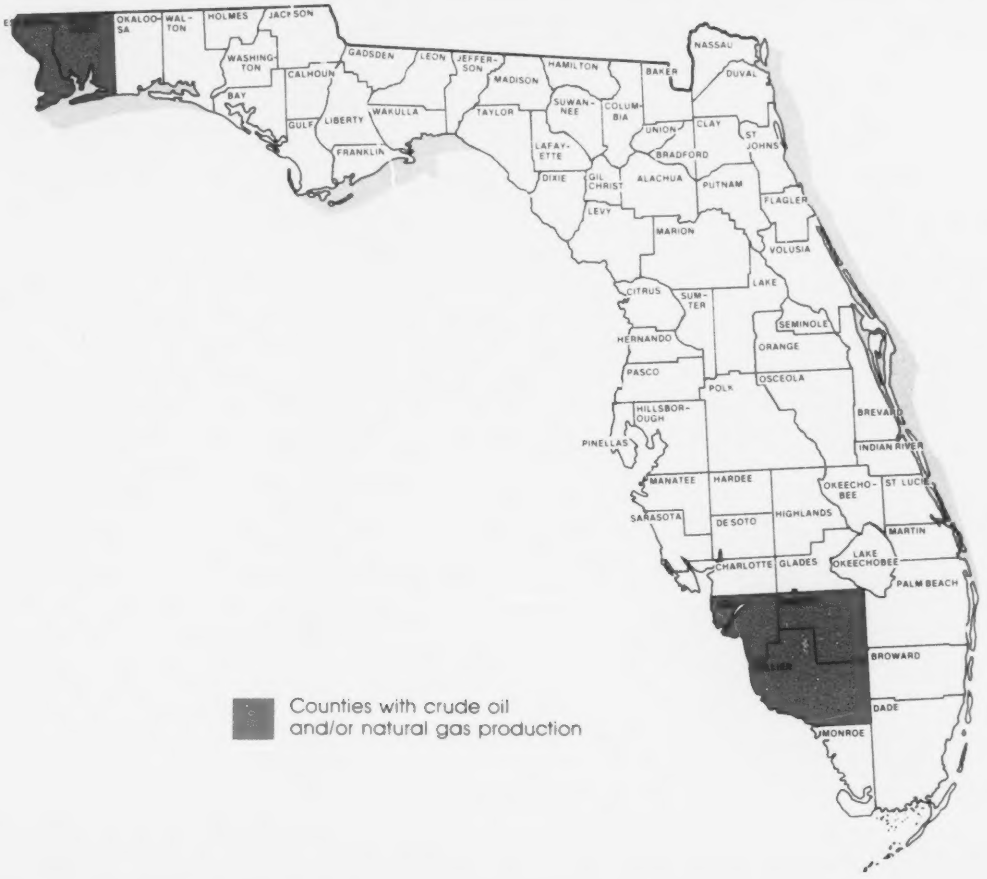
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	135	18.2
Gas wells	100	13.5
Dry holes	506	68.3
Total wells	741	100.0
Average depth per well (feet)		5,708
Total footage		4,229,720
Development Wells		
Oil wells	494	39.6
Gas wells	501	40.1
Dry holes	251	20.1
Service wells	3	0.2
Total wells	1,249	100.0
Average depth per well (feet)		5,549
Total footage		6,931,314
Total Wells		
Oil wells	629	31.6
Gas wells	601	30.2
Dry holes	757	38.0
Service wells	3	0.2
Total wells	1,990	100.0
Average depth per well (feet)		5,609
Total footage		11,161,034

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	8,778	27.2
Gas wells	5,288	16.3
Dry holes	18,301	56.5
Total wells	32,367	100.0

FLORIDA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BREVARD
INDIAN RIVER
MANATEE
HARDEE
OKEECHOBEE
ST LUCIE
SARASOTA
DE SOTO
HIGHLANDS
MARTIN
CHARLOTTE
GLADES
LAKE OKEECHOBEE
PALM BEACH
BROWARD
DADE
MONROE
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	67
2.	Number of counties with crude oil and/or gas production	5
3.	Total land area (acres)	34,617,600
4.	Area proved productive of crude oil and/or gas (acres)	35,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	3,720,000
6.	Percent of total land area productive or leased	10.8%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$6,244,049
8.	Average field price of crude oil per barrel in 1982	$31.25*
9.	Wellhead value of crude oil produced in 1982 (thous.)	$800,810
10.	Wellhead value of natural gas produced in 1982 (thous.)	$76,800

*Estimated

11.	Total wellhead value of oil and gas in 1982 (thous.)	$877,610
12.	Percent of petroleum value to total all minerals	33.7%
13.	Principal mineral products in order of value:	
	1st . . . . . Crude oil	
	2nd . . . . . Crushed stone	
	3rd . . . . . Portland cement	
14.	Number of employees engaged in oil and gas production	1,103
15.	First year of crude oil production	1943
	First year of natural gas production	1943
16.	First recorded production of:	
	Crude oil (barrels) . . . . . in 1943	4,000
	Natural gas (Mcf) . . . . . in 1949	10,000
17.	Geophysical activity — crew months worked in 1982	20

PRODUCTION AND RESERVES

18. Year of peak crude oil production	1978
19. Crude oil produced in peak year (barrels)	47,536,000
20. Percent of crude oil produced by stripper wells	Not Available
21. Number of producing wells at end of 1982: Crude oil	123
22. Average daily production of crude oil per well at end of 1982	624.4 b/d
23. Percent of wells on artificial lift	59.3%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	129,227	30,137*	159,364
1980	117,175	29,000*	146,175
1981	95,268	27,400*	122,668
1982	70,208	25,000*	95,208

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	14	2	16	14
Estimated production	26	5	31	27
Net change in reserves	−12	−3	−15	−13

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	612	69	681	509
Total production	515	52	567	423
Proved reserves, Dec. 31, 1982	97	17	114	86

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average)	5
28. Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil	16,130
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole	18,670

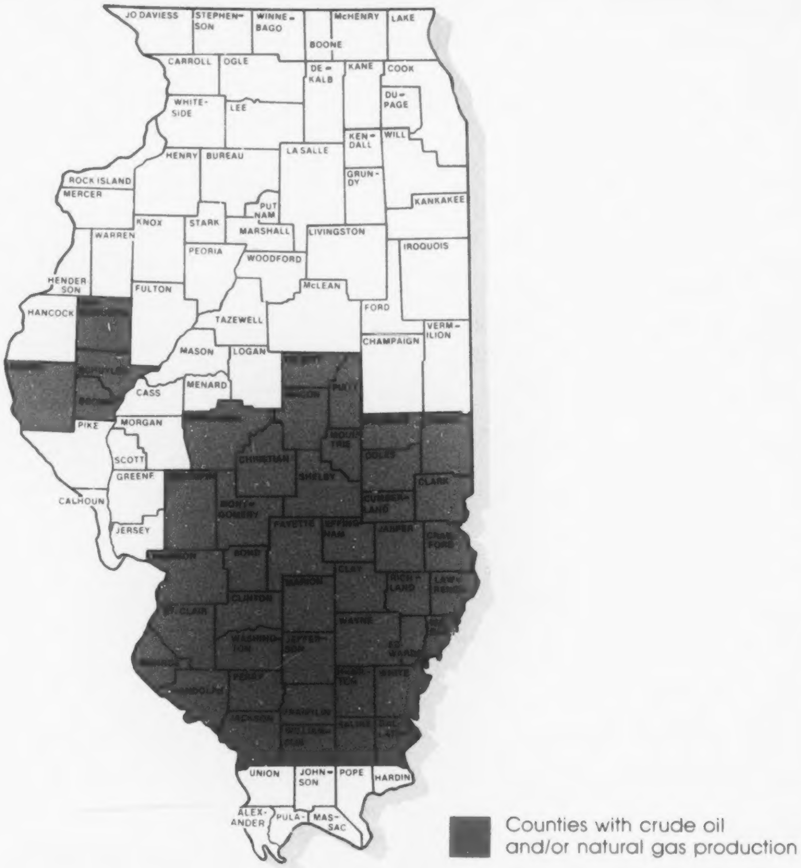
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	0	0
Gas wells	0	0
Dry holes	11	100.0
Total wells	11	100.0
Average depth per well (feet)		12,826
Total footage		141,081
Development Wells		
Oil wells	8	57.1
Gas wells	2	14.3
Dry holes	4	28.6
Service wells	0	0
Total wells	14	100.0
Average depth per well (feet)		13,049
Total footage		182,685
Total Wells		
Oil wells	8	32.0
Gas wells	2	8.0
Dry holes	15	60.0
Service wells	0	0
Total wells	25	100.0
Average depth per well (feet)		12,951
Total footage		323,766

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	246	27.6
Gas wells	4	0.4
Dry holes	641	72.0
Total wells	891	100.0

ILLINOIS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HANCOCK
TAZEWELL
FORD
VERMILION
MASON
LOGAN
CHAMPAIGN
CASS
MENARD
PIKE
MORGAN
SCOTT
GREENE
CALHOUN
JERSEY
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	102
2.	Number of counties with crude oil and/or gas production	44
3.	Total land area (acres)	35,678,720
4.	Area proved productive of crude oil and/or gas (acres)	668,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	3,800,000
6.	Percent of total land area productive or leased	12.5%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$11,115,661
8.	Average field price of crude oil per barrel in 1982	$31.69
9.	Wellhead value of crude oil produced in 1982 (thous.)	$878,130
10.	Wellhead value of natural gas produced in 1982 (thous.)	$3,725
11.	Total wellhead value of oil and gas in 1982 (thous.)	$881,855
12.	Percent of petroleum value to total all minerals	32.2%
13.	Principal mineral products in order of value: 1st .... Coal 2nd .... Crude oil 3rd .... Crushed stone	
14.	Number of employees engaged in oil and gas production	7,300
15.	First year of crude oil production	1889
	First year of natural gas production	1882
16.	First recorded production of:	
	Crude oil (barrels) ..... in 1890	1,460
	Natural gas (Mcf) ..... in 1906	410,000
17.	Geophysical activity — crew months worked in 1982	16

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1940
19. Crude oil produced in peak year (barrels) 147,647,000
20. Percent of crude oil produced by stripper wells 92.3%
21. Number of producing wells at end of 1982: Crude oil 27,600
Gas and gas distillate 60
Total 27,660
22. Average daily production of crude oil per well at end of 1982 2.7 b/d
23. Percent of wells on artificial lift 100%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	59,707	24,384*	84,091
1980	62,027	24,500*	86,527
1981	66,000	24,000*	90,000
1982	75,918	20,000*	95,918

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found	42	N.A.	42	N.A.
Estimated production	21	N.A.	21	N.A.
Net change in reserves	21	N.A.	21	N.A.

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found	3,316	N.A.	3,316	N.A.
Total production	3,166	N.A.	3,166	N.A.
Proved reserves, Dec. 31, 1982	150	N.A.	150	N.A.

EXPLORATION AND DEVELOPMENT

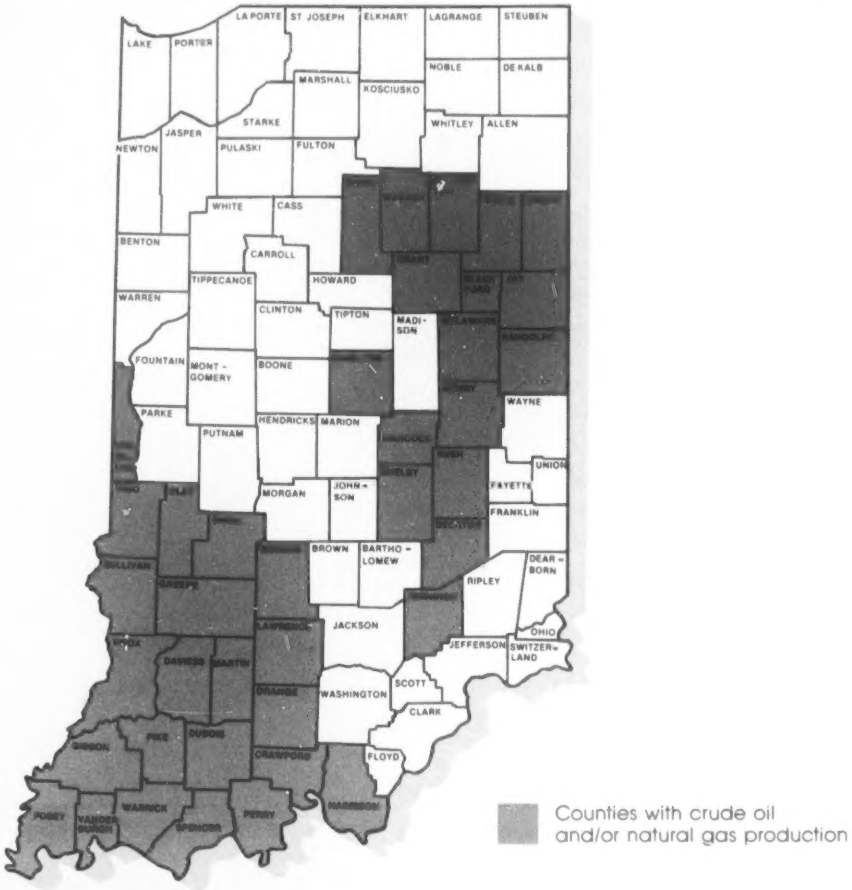
27. Rotary drilling rigs active in 1982 (average) 76
28. Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil 5,405
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 14,942
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	126	19.4
Gas wells	2	0.3
Dry holes	521	80.3
Total wells	649	100.0
Average depth per well (feet)		2,784
Total footage		1,806,462
Development Wells		
Oil wells	1,591	63.8
Gas wells	8	0.3
Dry holes	753	30.2
Service wells	141	5.7
Total wells	2,493	100.0
Average depth per well (feet)		2,587
Total footage		6,449,043
Total Wells		
Oil wells	1,717	54.6
Gas wells	10	0.4
Dry holes	1,274	40.5
Service wells	141	4.5
Total wells	3,142	100.0
Average depth per well (feet)		2,628
Total footage		8,255,505

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	73,144	61.1
Gas wells	1,415	1.2
Dry holes	45,201	37.7
Total wells	119,760	100.0

INDIANA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WARRICK
POSEY
VANDERBURGH
SPENCER
PERRY
HARRISON
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	92
2. Number of counties with crude oil and/or gas production	39
3. Total land area (acres)	23,102,080
4. Area proved productive of crude oil and/or gas (acres)	7,838,070
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	1,010,000
6. Percent of total land area productive or leased	38.3%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$1,837,216
8. Average field price of crude oil per barrel in 1982	$31.66
9. Wellhead value of crude oil produced in 1982 (thous.)	$176,125
10. Wellhead value of natural gas produced in 1982 (thous.)	$800
11. Total wellhead value of oil and gas in 1982 (thous.)	$176,925
12. Percent of petroleum value to total all minerals	15.9%
13. Principal mineral products in order of value: 1st . . . . . Coal 2nd . . . . . Crude oil 3rd . . . . . Crushed stone	
14. Number of employees engaged in oil and gas production	923
15. First year of crude oil production	1889
First year of natural gas production	1885
16. First recorded production of: Crude oil (barrels) . . . . . in 1889	23,000
Natural gas (Mcf) . . . . . in 1906	7,861
17. Geophysical activity — crew months worked in 1982	1

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1953
19.	Crude oil produced in peak year (barrels)	12,823,000
20.	Percent of crude oil produced by stripper wells	85.9%
21.	Number of producing wells at end of 1982: Crude oil	6,047
	Gas and gas distillate	720
	Total	6,767
22.	Average daily production of crude oil per well at end of 1982	2.4 b/d
23.	Percent of wells on artificial lift ...	100%

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	12,918	0*	12,918
1980	13,601	200*	13,801
1981	12,934	200*	13,134
1982	15,241	200*	15,441

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	9	N.A.	9	N.A.
Estimated production	4	N.A.	4	N.A.
Net change in reserves	5	N.A.	5	N.A.

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	508	N.A.	508	N.A.
Total production	480	N.A.	28	N.A.
Proved reserves, Dec. 31, 1982	28	N.A.	28	N.A.

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	7
28.	Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil	4,508
29.	Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole	14,942

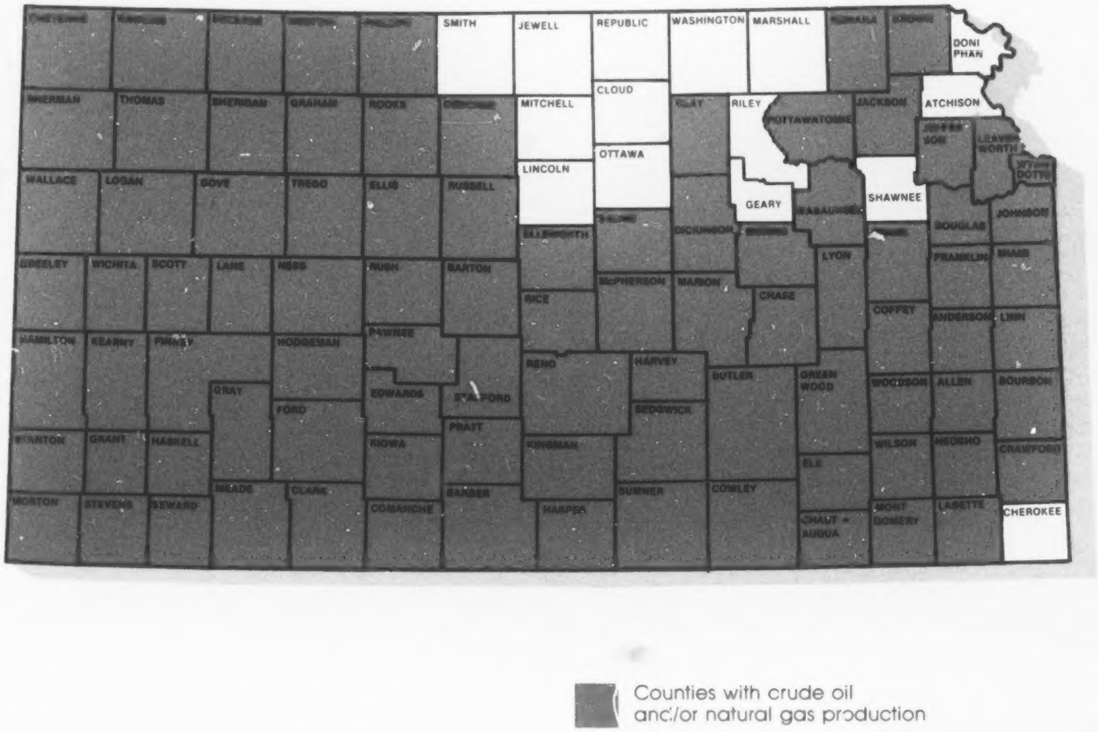
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	76	16.9
Gas wells	9	2.0
Dry holes	364	81.1
Total wells	449	100.0
Average depth per well (feet)		2,100
Total footage		942,847
Development Wells		
Oil wells	388	64.5
Gas wells	15	2.5
Dry holes	170	28.2
Service wells	29	4.8
Total wells	602	100.0
Average depth per well (feet)		1,740
Total footage		1,047,382
Total Wells		
Oil wells	464	44.1
Gas wells	24	2.3
Dry holes	534	50.8
Service wells	29	2.8
Total wells	1,051	100.0
Average depth per well (feet)		1,894
Total footage		1,990,229

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	36,849	59.5
Gas wells	2,075	3.3
Dry holes	23,053	37.2
Total wells	61,977	100.0

KANSAS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MORTON
STEVENS
SEWARD
COMANCHE
HARPER
CHAUTAUQUA
MONTGOMERY
LABETTE
CHEROKEE
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	105
2. Number of counties with crude oil and/or gas production	90
3. Total land area (acres)	52,343,680
4. Area proved productive of crude oil and/or gas (acres)	7,600,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	9,400,000
6. Percent of total land area productive or leased	32.5%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$20,974,133
8. Average field price of crude oil per barrel in 1982	$30.79
9. Wellhead value of crude oil produced in 1982 (thous.)	$2,171,465
10. Wellhead value of natural gas produced in 1982 (thous.)	$645,655
11. Total wellhead value of oil and gas in 1982 (thous.)	$2,817,120
12. Percent of petroleum value to total all minerals	78.6%
13. Principal mineral products in order of value: 1st .... Crude oil 2nd .... Natural gas 3rd .... Portland cement	
14. Number of employees engaged in oil and gas production	17,108
15. First year of crude oil production	1889
First year of natural gas production	1882
16. First recorded production of:	
Crude oil (barrels) ..... in 1889	500
Natural gas (Mcf) ..... in 1906	69,323
17. Geophysical activity — crew months worked in 1982	98

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1956
19. Crude oil produced in peak year (barrels) 124,204,000
20. Percent of crude oil produced by stripper wells 68.3%
21. Number of producing wells at end of 1982: Crude oil 46,189
    Gas and gas distillate 11,254
    Total 57,443
22. Average daily production of crude oil per well at end of 1982 4.2 b/d
23. Percent of wells on artificial lift ... 97.6%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	156,151	87,397*	243,548
1980	164,347	78,500*	242,847
1981	180,301	76,500*	256,801
1982	193,219	75,000*	268,219

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	70	−93	−23	144
Estimated production	63	14	77	459
Net change in reserves	7	−107	−100	−315

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	5,454	982	6,436	37,701
Total production	5,076	680	5,756	27,573
Proved reserves, Dec. 31, 1982	378	302	680	10,128

EXPLORATION AND DEVELOPMENT

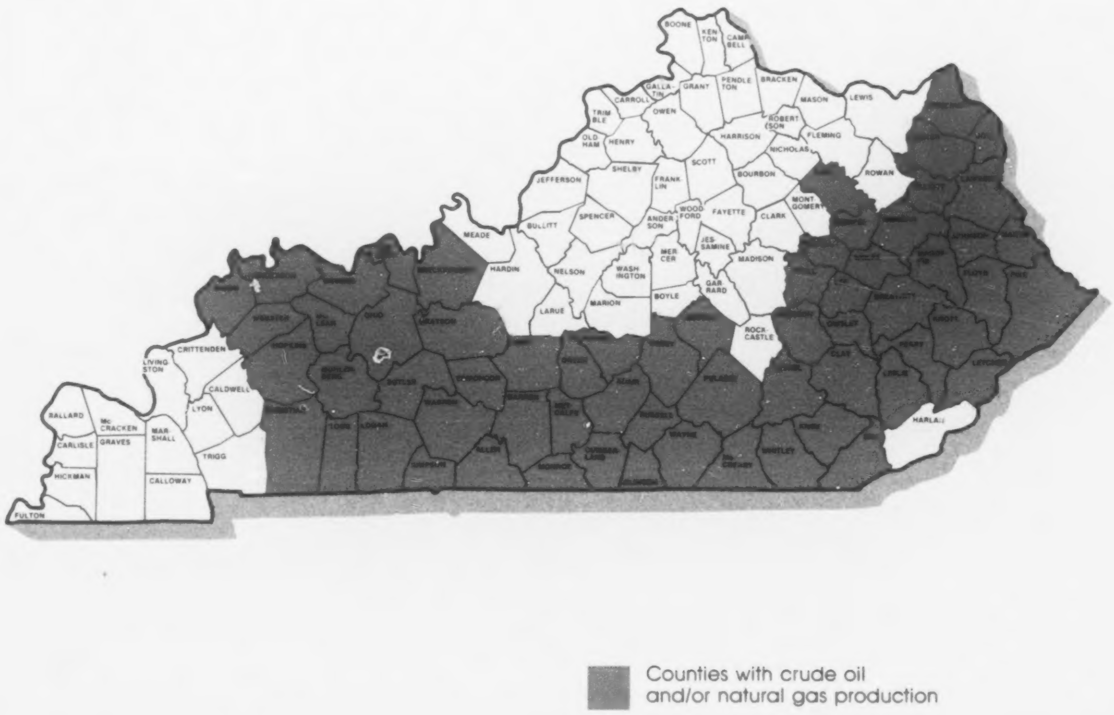
27. Rotary drilling rigs active in 1982 (average) 157
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Natural gas 6,774
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 8,713
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	358	17.0
Gas wells	81	3.8
Dry holes	1,671	79.2
Total wells	2,110	100.0
Average depth per well (feet)		3,770
Total footage		7,954,245
Development Wells		
Oil wells	3,750	53.1
Gas wells	729	10.3
Dry holes	2,354	33.4
Service wells	223	3.2
Total wells	7,056	100.0
Average depth per well (feet)		3,057
Total footage		21,567,448
Total Wells		
Oil wells	4,108	44.8
Gas wells	810	8.8
Dry holes	4,025	43.9
Service wells	223	2.5
Total wells	9,166	100.0
Average depth per well (feet)		3,221
Total footage		29,521,693

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	109,070	51.6
Gas wells	20,735	9.8
Dry holes	81,714	38.6
Total wells	211,519	100.0

KENTUCKY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OWSLEY
BREATHITT
KNOTT
FLOYD
PIKE
LETCHER
JOHNSON
MARTIN
LAWRENCE
ELLIOTT
MAGOFFIN
HARLAN
▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	120
2.	Number of counties with crude oil and/or gas production	63
3.	Total land area (acres)	25,376,000
4.	Area proved productive of crude oil and/or gas (acres)	1,000,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	4,500,000
6.	Percent of total land area productive or leased	21.7%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$15,063,483
8.	Average field price of crude oil per barrel in 1982	$32.60*
9.	Wellhead value of crude oil produced in 1982 (thous.)	$239,575
10.	Wellhead value of natural gas produced in 1982 (thous.)	$85,120
11.	Total wellhead value of oil and gas in 1982 (thous.)	$324,695
12.	Percent of petroleum value to total all minerals	6.28%
13.	Principal mineral products in order of value: 1st . . . . . . Coal 2nd . . . . . . Crude oil 3rd . . . . . . Crushed stone	
14.	Number of employees engaged in oil and gas production	3,554
15.	First year of crude oil production	1860
	First year of natural gas production	1888
16.	First recorded production of: Crude oil (barrels) . . . . . in 1883 Natural gas (Mcf) . . . . . in 1906	 5,000 789
17.	Geophysical activity — crew months worked in 1982	4

*Estimated

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1959
19. Crude oil produced in peak year (barrels) 27,272,000
20. Percent of crude oil produced by stripper wells 68.4%
21. Number of producing wells at end of 1982: Crude oil 15,109
    Gas and gas distillate 8,084
    Total 23,193
22. Average daily production of crude oil per well at end of 1982 1.2 b/d
23. Percent of wells on artificial lift ... 100%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	15,107	12,877*	27,984
1980	16,246	8,900*	25,146
1981	17,940	8,500*	26,440
1982	20,134	8,000*	28,134

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	12	13	25	79
Estimated production	5	3	8	48
Net change in reserves	7	10	17	31

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	703	145	848	4,178
Total production	667	110	777	3,586
Proved reserves, Dec. 31, 1982	36	35	71	592

EXPLORATION AND DEVELOPMENT

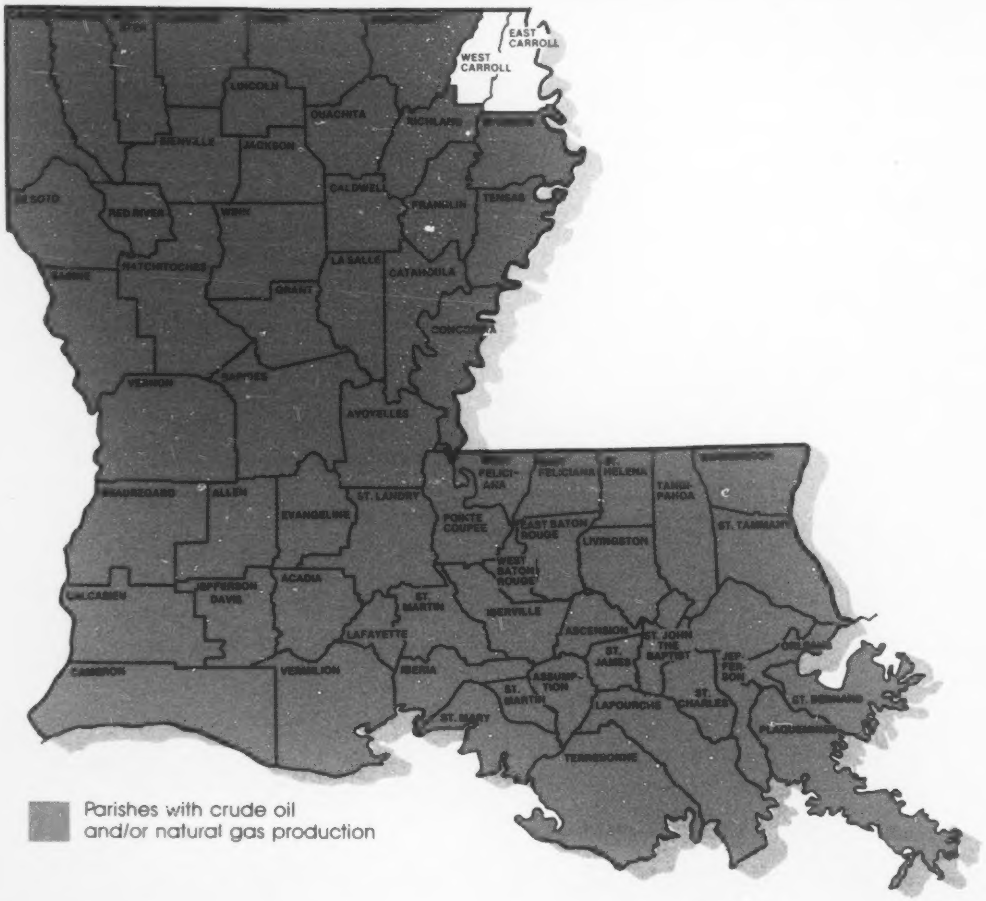
27. Rotary drilling rigs active in 1982 (average) 10
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Crude oil 7,598
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 15,200
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	169	20.6
Gas wells	46	5.6
Dry holes	606	73.8
Total wells	821	100.0
Average depth per well (feet)		1,624
Total footage		1,333,569
Development Wells		
Oil wells	1,068	46.7
Gas wells	179	7.8
Dry holes	912	39.9
Service wells	129	5.6
Total wells	2,288	100.0
Average depth per well (feet)		1,435
Total footage		3,282,246
Total Wells		
Oil wells	1,237	39.8
Gas wells	225	7.2
Dry holes	1,518	48.8
Service wells	129	4.2
Total wells	3,109	100.0
Average depth per well (feet)		1,485
Total footage		4,615,815

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	47,453	52.4
Gas wells	9,868	10.9
Dry holes	33,232	36.7
Total wells	90,553	100.0

LOUISIANA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WINN
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GRANT
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ST. BERNARD
LAFOURCHE
ST. MARY
PLAQUEMINES
TERREBONNE
▨ Parishes with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of parishes	64
2.	Number of parishes with crude oil and/or gas production	62
3.	Total land area (acres)	28,755,200
4.	Area proved productive of crude oil and/or gas (acres)	6,990,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	6,560,000
6.	Percent of total land area productive or leased	47.1%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$108,554,736
8.	Average field price of crude oil per barrel in 1982	$32.53
9.	Wellhead value of crude oil produced in 1982 (thous.)	$14,911,589
10.	Wellhead value of natural gas produced in 1982 (thous.)	$15,511,700
11.	Total wellhead value of oil and gas in 1982 (thous.)	$30,423,289
12.	Percent of petroleum value to total all minerals	98.1%
13.	Principal mineral products in order of value: 1st .... Natural gas 2nd .... Crude oil 3rd .... Salt	
14.	Number of employees engaged in oil and gas production	95,300
15.	First year of crude oil production	1902
	First year of natural gas production	1905
16.	First recorded production of:	
	Crude oil (barrels) ..... in 1902	549,000
	Natural gas (Mcf) ..... in 1905	31
17.	Geophysical activity — crew months worked in 1982	563

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1971
19. Crude oil produced in peak year (barrels) 935,243,000
20. Percent of crude oil produced by stripper wells 2%
21. Number of producing wells at end of 1982: Crude oil 22,380
    Gas and gas distillate 13,503
    Total 35,883
22. Average daily production of crude oil per well at end of 1982 56.4 b/d
23. Percent of wells on artificial lift 91%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	1,341,608	340,548*	1,682,156
1980	1,281,806	305,000*	1,586,806
1981	1,231,000	315,000*	1,546,000
1982	1,255,877	305,000*	1,560,877

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	131	133	264	3,687
Estimated production	388	165	553	6,236
Net change in reserves	−257	−32	−289	−2,549

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	24,090	3,326	27,416	217,710
Total production	21,362	2,031	23,393	171,811
Proved reserves, Dec. 31, 1982	2,728	1,295	4,023	45,899

EXPLORATION AND DEVELOPMENT

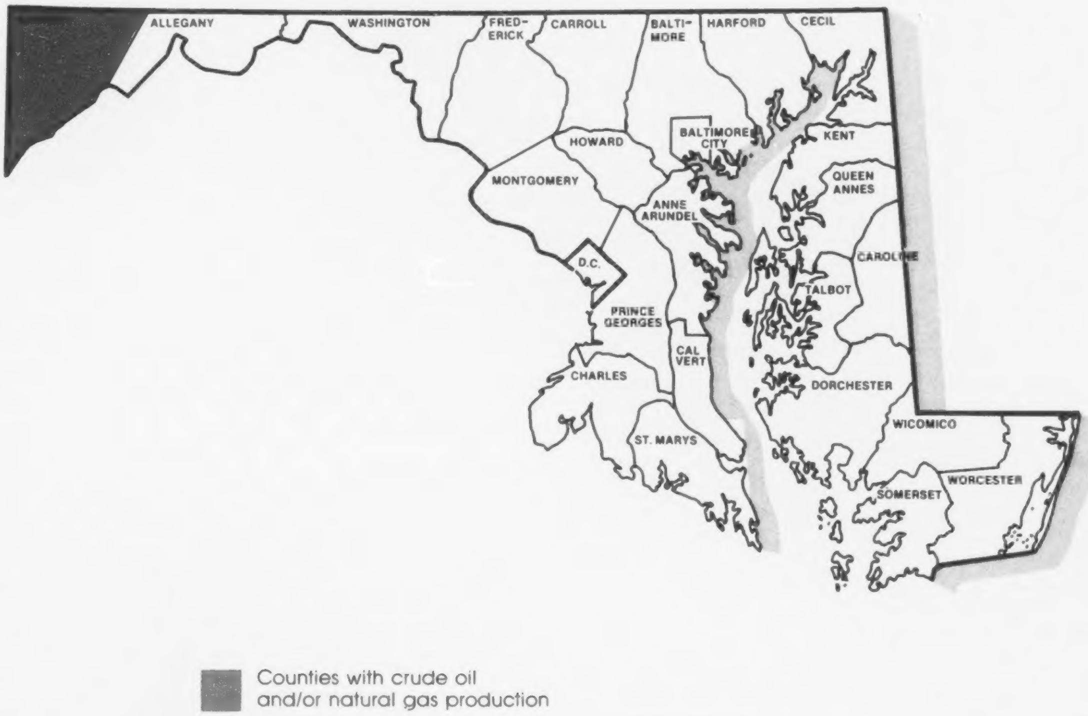
27. Rotary drilling rigs active in 1982 (average) 343
28. Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas 21,862
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 25,600
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	39	4.7
Gas wells	54	6.6
Dry holes	732	88.7
Total wells	825	100.0
Average depth per well (feet)		9,711
Total footage		8,011,604
Development Wells		
Oil wells	1,508	35.6
Gas wells	1,360	32.1
Dry holes	1,315	31.1
Service wells	52	1.2
Total wells	4,235	100.0
Average depth per well (feet)		5,851
Total footage		24,777,386
Total Wells		
Oil wells	1,547	30.6
Gas wells	1,414	27.9
Dry holes	2,047	40.5
Service wells	52	1.0
Total wells	5,060	100.0
Average depth per well (feet)		6,480
Total footage		32,788,990

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	74,352	46.0
Gas wells	26,950	16.7
Dry holes	60,356	37.3
Total wells	161,658	100.0

MARYLAND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CARROLL
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CECIL
HOWARD
BALTIMORE CITY
KENT
MONTGOMERY
ANNE ARUNDEL
QUEEN ANNES
CAROLINE
D.C.
TALBOT
PRINCE GEORGES
CAL VERT
CHARLES
DORCHESTER
WICOMICO
ST. MARYS
WORCESTER
SOMERSET
▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	23
2. Number of counties with crude oil and/or gas production	1
3. Total land area (acres)	6,330,240
4. Area proved productive of crude oil and/or gas (acres)	14,200
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	480,000
6. Percent of total land area productive or leased	7.8%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$6,830
8. Average field price of crude oil per barrel in 1982	Not Applicable
9. Wellhead value of crude oil produced in 1982 (thous.)	Not Applicable
10. Wellhead value of natural gas produced in 1982 (thous.)	$25
11. Total wellhead value of oil and gas in 1982 (thous.)	$25
12. Percent of petroleum value to total all minerals	0.01%
13. Principal mineral products in order of value: 1st . . . . . Coal 2nd . . . . . Crushed stone 3rd . . . . . Sand and gravel	
14. Number of employees engaged in oil and gas production	36
15. First year of natural gas production	1943
16. First recorded production of: Natural gas (Mcf) . . . . . in 1949	3,422
17. Geophysical activity — crew months worked in 1982	2

PRODUCTION AND RESERVES

18. Year of peak natural gas production 1957
19. Natural gas produced in peak year (barrels) 4,649
20. Percent of crude oil produced by stripper wells .... Not Applicable
21. Number of producing wells at end of 1982:
    Gas and gas distillate 10
22. Average daily production of natural gas per well at end of 1982 .... 15 Mcf
23. Percent of wells on artificial lift ... Not applicable
24. Average production (Mcf per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	0	247	247
1980	0	186	186
1981	0	154	154
1982	0	150*	150*

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found				
Estimated production		Not Available		
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found				
Total production		Not Available		
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

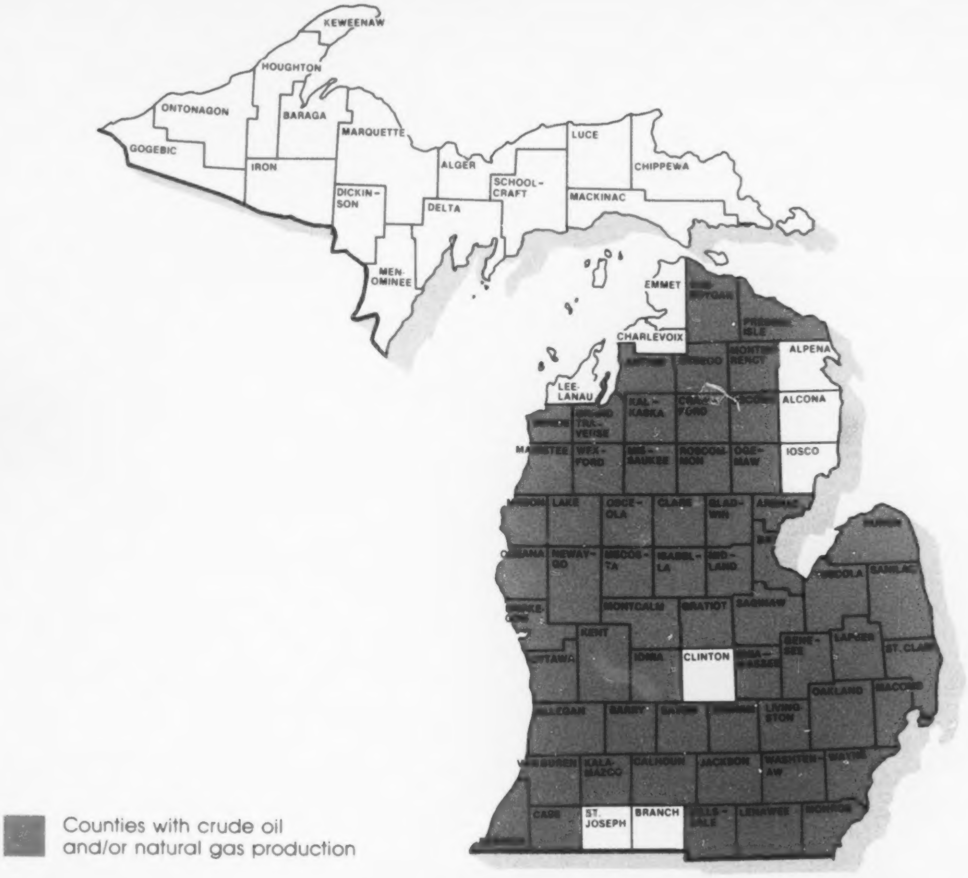
27. Rotary drilling rigs active in 1982 (average) 4
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Natural gas 8,658
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 11,617
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	0	0
Gas wells	0	0
Dry holes	0	0
Total wells	0	0
Average depth per well (feet)		0
Total footage		0
Development Wells		
Oil wells	0	0
Gas wells	0	0
Dry holes	0	0
Service wells	0	0
Total wells	0	0
Average depth per well (feet)		0
Total footage		0
Total Wells		
Oil wells	0	0
Gas wells	0	0
Dry holes	0	0
Service wells	0	0
Total wells	0	0
Average depth per well (feet)		0
Total footage		0

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	0	0
Gas wells	72	61.5
Dry holes	45	38.5
Total wells	117	100.0

MICHIGAN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MACKINAC
DELTA
MENOMINEE
EMMET
PRESQUE ISLE
CHARLEVOIX
MONTMORENCY
ALPENA
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KALKASKA
CRAWFORD
ALCONA
GRAND TRAVERSE
MANISTEE
WEXFORD
MISSAUKEE
ROSCOMMON
OGEMAW
IOSCO
LAKE
OSCEOLA
CLARE
GLADWIN
NEWAYGO
MECOSTA
ISABELLA
MIDLAND
TUSCOLA
SANILAC
MONTCALM
GRATIOT
SAGINAW
KENT
OTTAWA
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SHIAWASSEE
GENESEE
LAPEER
ST. CLAIR
OAKLAND
MACOMB
ALLEGAN
BARRY
LIVINGSTON
VAN BUREN
KALAMAZOO
CALHOUN
JACKSON
WASHTENAW
WAYNE
CASS
ST. JOSEPH
BRANCH
HILLSDALE
LENAWEE
MONROE
▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	83
2. Number of counties with crude oil and/or gas production	59
3. Total land area (acres)	36,362,880
4. Area proved productive of crude oil and/or gas (acres)	574,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	13,750,000
6. Percent of total land area productive or leased	37.8%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$6,356,397
8. Average field price of crude oil per barrel in 1982	$31.99*
9. Wellhead value of crude oil produced in 1982 (thous.)	$1,006,450
10. Wellhead value of natural gas produced in 1982 (thous.)	$474,385

*Estimated

11. Total wellhead value of oil and gas in 1982 (thous.)	$1,480,835
12. Percent of petroleum value to total all minerals	50.7%
13. Principal mineral products in order of value:	
1st . . . Crude oil	
2nd . . . Iron ore	
3rd . . . Natural gas	
14. Number of employees engaged in oil and gas production	4,600
15. First year of crude oil production	1889
First year of natural gas production	1909
16. First recorded production of:	
Crude oil (barrels) . . . in 1912	4,000
Natural gas (Mcf) . . . in 1909	510
17. Geophysical activity — crew months worked in 1982	159

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1978
19. Crude oil produced in peak year (barrels) 34,667,000
20. Percent of crude oil produced by stripper wells 7.4%
21. Number of producing wells at end of 1982: Crude oil 4,536
    Gas and gas distillate 667
    Total 5,203
22. Average daily production of crude oil per well at end of 1982 19.5 b/d
23. Percent of wells on artificial lift ... 85.9%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	95,512	30,685*	126,197
1980	89,489	32,000*	121,489
1981	89,493	31,500*	120,993
1982	86,197	30,000*	116,197

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	−27	7	−20	96
Estimated production	29	12	41	148
Net change in reserves	−56	−5	−61	−52

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	1,083	181	1,264	1,815
Total production	899	84	983	615
Proved reserves, Dec. 31, 1982	184	97	281	1,200

EXPLORATION AND DEVELOPMENT

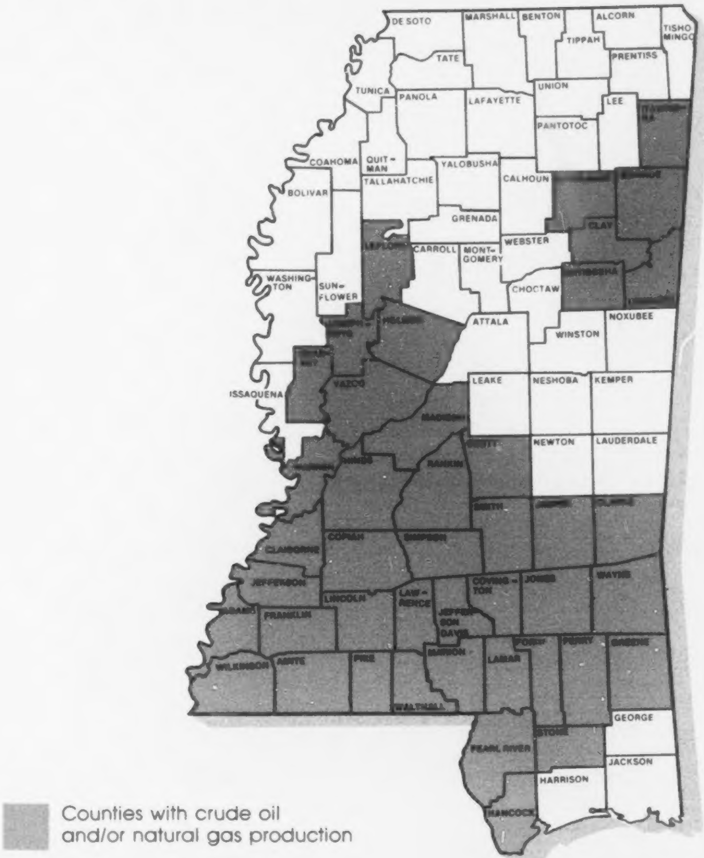
27. Rotary drilling rigs active in 1982 (average) 31
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Natural gas 10,695
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 17,466
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	46	10.9
Gas wells	30	7.1
Dry holes	347	82.0
Total wells	423	100.0
Average depth per well (feet)		4,604
Total footage		1,947,631
Development Wells		
Oil wells	253	65.4
Gas wells	16	4.1
Dry holes	101	26.1
Service wells	17	4.4
Total wells	387	100.0
Average depth per well (feet)		3,813
Total footage		1,475,650
Total Wells		
Oil wells	299	36.9
Gas wells	46	5.7
Dry holes	448	55.3
Service wells	17	2.1
Total wells	810	100.0
Average depth per well (feet)		4,226
Total footage		3,423,281

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	12,991	39.8
Gas wells	2,566	7.9
Dry holes	17,099	52.3
Total wells	32,656	100.0

MISSISSIPPI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TATE
PRENTISS
TUNICA
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COAHOMA
QUIT-MAN
YALOBUSHA
CALHOUN
TALLAHATCHIE
BOLIVAR
CHICKASAW
MONROE
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CLAY
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WEBSTER
OKTIBBEHA
WASHING-TON
SUN-FLOWER
CHOCTAW
ATTALA
NOXUBEE
HUMPHREYS
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WINSTON
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LEAKE
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MADISON
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NEWTON
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SMITH
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SIMPSON
CLAIBORNE
JEFFERSON
COVING-TON
JONES
WAYNE
ADAMS
FRANKLIN
LINCOLN
LAW-RENCE
JEFFER-SON DAVIS
FORREST
PERRY
GREENE
WILKINSON
AMITE
PIKE
MARION
LAMAR
WALTHALL
GEORGE
STONE
PEARL RIVER
JACKSON
HARRISON
HANCOCK

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	82
2. Number of counties with crude oil and/or gas production	43
3. Total land area (acres)	30,269,440
4. Area proved productive of crude oil and/or gas (acres)	628,500
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	11,315,600
6. Percent of total land area productive or leased	39.5%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$8,456,562
8. Average field price of crude oil per barrel in 1982	$29.05
9. Wellhead value of crude oil produced in 1982 (thous.)	$960,015
10. Wellhead value of natural gas produced in 1982 (thous.)	$602,450

11. Total wellhead value of oil and gas in 1982 (thous.)	$1,562,465
12. Percent of petroleum value to total all minerals	94.5%
13. Principal mineral products in order of value:	
1st .... Crude oil	
2nd .... Natural gas	
3rd .... Sand and gravel	
14. Number of employees engaged in oil and gas production	10,999
15. First year of crude oil production	1889
First year of natural gas production	1923
16. First recorded production of:	
Crude oil (barrels) ..... in 1926	107,000
Natural gas (Mcf) ..... in 1926	5,000
17. Geophysical activity — crew months worked in 1982	180

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1970
19.	Crude oil produced in peak year (barrels)	65,119,000
20.	Percent of crude oil produced by stripper wells	11.1%
21.	Number of producing wells at end of 1982: Crude oil	2,640
	Gas and gas distillate	520
	Total	3,160
22.	Average daily production of crude oil per well at end of 1982	35.1 b/d
23.	Percent of wells on artificial lift	95.0%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	102,266	2,466*	104,732
1980	98,210	3,500*	101,710
1981	93,710	3,500*	97,210
1982	90,540	3,500*	94,040

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found	44	3	47	−40
Estimated production	30	3	33	199
Net change in reserves	14	0	14	−239

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found	2,220	113	2,333	7,820
Total production	1,997	95	2,092	6,017
Proved reserves, Dec. 31, 1982	223	18	241	1,803

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	42
28.	Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas	21,727
29.	Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	25,460

30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	16	5.7
Gas wells	8	2.8
Dry holes	258	91.5
Total wells	282	100.0
Average depth per well (feet)		8,780
Total footage		2,476,080
Development Wells		
Oil wells	104	30.6
Gas wells	62	18.2
Dry holes	174	51.2
Service wells	0	0
Total wells	340	100.0
Average depth per well (feet)		9,323
Total footage		3,169,733
Total Wells		
Oil wells	120	19.3
Gas wells	70	11.3
Dry holes	432	69.4
Service wells	0	0
Total wells	622	100.0
Average depth per well (feet)		9,077
Total footage		5,645,813

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	6,930	32.8
Gas wells	1,139	5.4
Dry holes	13,067	61.8
Total wells	21,136	100.0

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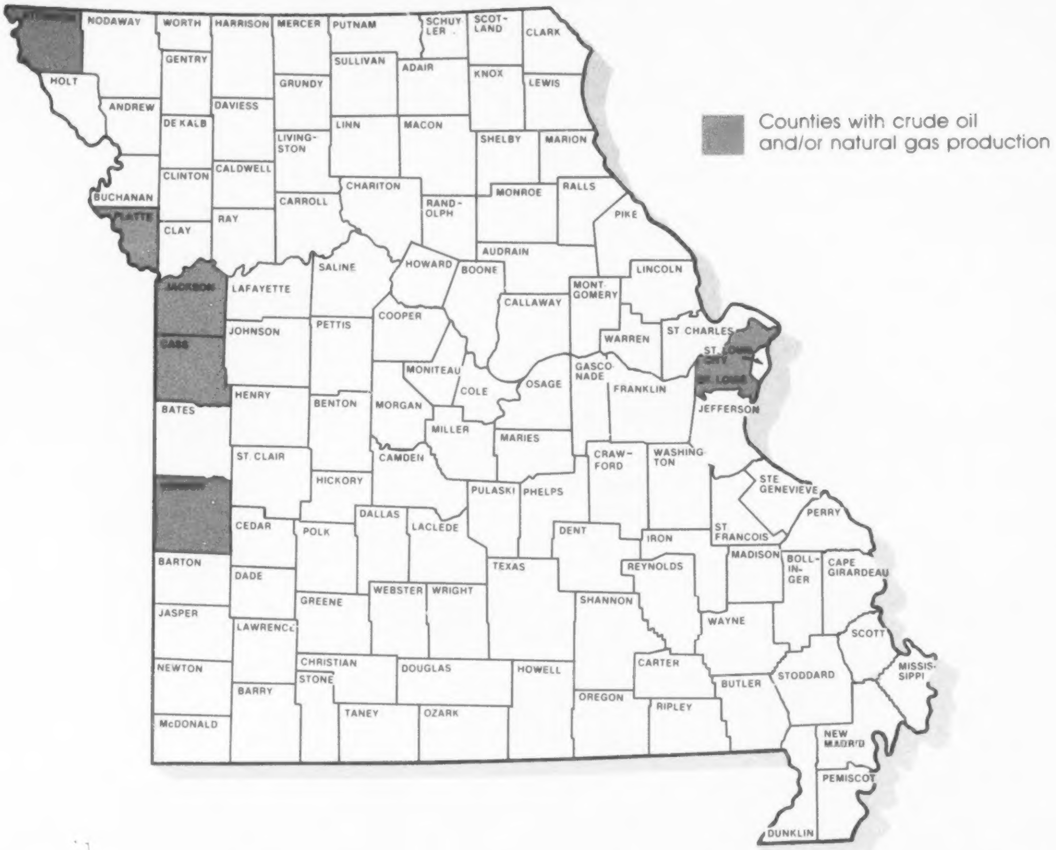
▨ Counties with crude oil and/or natural gas production
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HARRISON
MERCER
PUTNAM
SCHUYLER
SCOTLAND
CLARK
GENTRY
SULLIVAN
ADAIR
KNOX
LEWIS
HOLT
ANDREW
GRUNDY
DAVIESS
DE KALB
LIVINGSTON
LINN
MACON
SHELBY
MARION
CLINTON
CALDWELL
CHARITON
BUCHANAN
PLATTE
CLAY
RAY
CARROLL
RANDOLPH
MONROE
RALLS
PIKE
AUDRAIN
SALINE
HOWARD
BOONE
LINCOLN
JACKSON
LAFAYETTE
MONTGOMERY
CALLAWAY
COOPER
JOHNSON
PETTIS
WARREN
ST. CHARLES
ST. LOUIS CITY
ST. LOUIS
CASS
MONITEAU
COLE
OSAGE
GASCONADE
FRANKLIN
HENRY
BENTON
MORGAN
JEFFERSON
BATES
MILLER
MARIES
ST. CLAIR
CAMDEN
CRAWFORD
WASHINGTON
HICKORY
PULASKI
PHELPS
STE GENEVIEVE
DALLAS
LACLEDE
PERRY
CEDAR
POLK
DENT
IRON
ST FRANCOIS
BARTON
TEXAS
REYNOLDS
MADISON
BOLLINGER
CAPE GIRARDEAU
DADE
WEBSTER
WRIGHT
GREENE
SHANNON
JASPER
LAWRENCE
WAYNE
SCOTT
CHRISTIAN
CARTER
NEWTON
STONE
DOUGLAS
HOWELL
STODDARD
MISSISSIPPI
BARRY
BUTLER
OREGON
RIPLEY
TANEY
OZARK
McDONALD
NEW MADRID
PEMISCOT
DUNKLIN

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	114
2. Number of counties with crude oil and/or gas production	6
3. Total land area (acres)	44,156,800
4. Area proved productive of crude oil and/or gas (acres)	12,900
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	620,000
6. Percent of total land area productive or leased	1.4%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$25,760
8. Average field price of crude oil per barrel in 1982	$31.25
9. Wellhead value of crude oil produced in 1982 (thous.)	$6,313
10. Wellhead value of natural gas produced in 1982 (thous.)	Not available
11. Total wellhead value of oil and gas in 1982 (thous.)	$6,313
12. Percent of petroleum value to total all minerals	0.6%
13. Principal mineral products in order of value:	
1st . . . . . Lead	
2nd . . . . . Portland cement	
3rd . . . . . Coal	
14. Number of employees engaged in oil and gas production	215
15. First year of crude oil production	1888
First year of natural gas production	1887
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1889	20
Natural gas (Mcf) . . . . . in 1906	33,560
17. Geophysical activity — crew months worked in 1982	None Reported

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1981
19. Crude oil produced in peak year (barrels) 226,000
20. Percent of crude oil produced by stripper wells 100%
21. Number of producing wells at end of 1982: Crude oil 499
22. Average daily production of crude oil per well at end of 1982 1.6 b/d
23. Percent of wells on artificial lift ... 100%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	249	0*	249
1980	355	0*	355
1981	619	0*	619
1982	553	0*	553

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found				
Estimated production		Not Available		
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found				
Total production		Not Available		
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

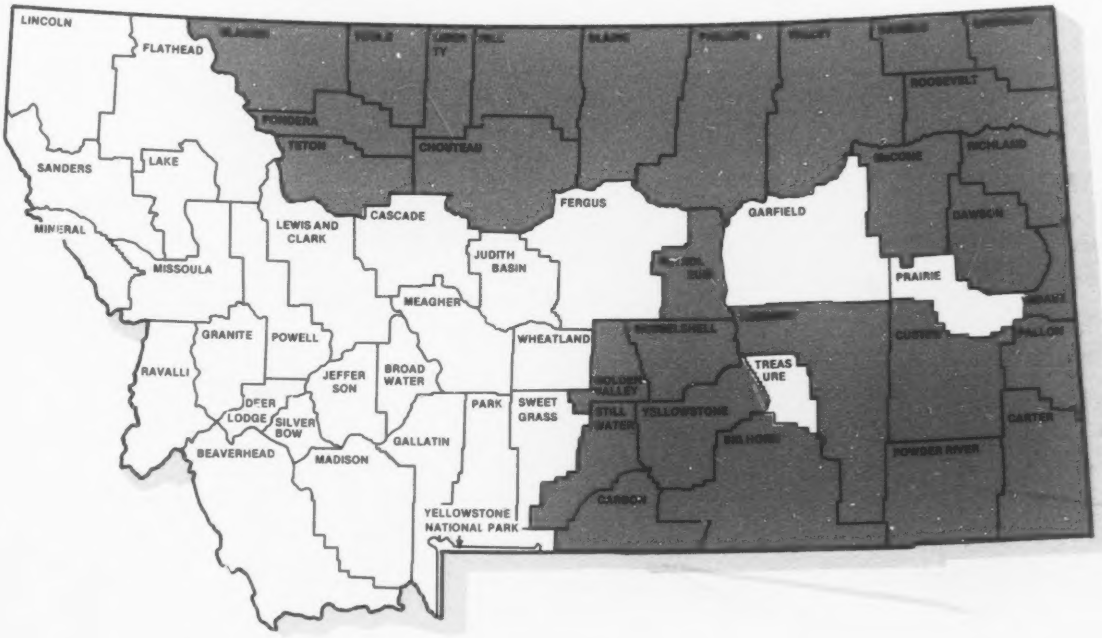
27. Rotary drilling rigs active in 1982 (average) 0
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Crude oil 2,975
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 4,902
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	19	20.7
Gas wells	6	6.5
Dry holes	67	72.8
Total wells	92	100.0
Average depth per well (feet)		638
Total footage		58,762
Development Wells		
Oil wells	229	60.7
Gas wells	5	1.4
Dry holes	28	7.4
Service wells	115	30.5
Total wells	377	100.0
Average depth per well (feet)		339
Total footage		127,623
Total Wells		
Oil wells	248	52.9
Gas wells	11	2.3
Dry holes	95	20.3
Service wells	115	24.5
Total wells	469	100.0
Average depth per well (feet)		397
Total footage		186,385

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	579	33.6
Gas wells	193	11.2
Dry holes	949	55.2
Total wells	1,721	100.0

MONTANA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TETON
CHOUTEAU
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DAWSON
LEWIS AND CLARK
CASCADE
FERGUS
GARFIELD
JUDITH BASIN
MISSOULA
PRAIRIE
MEAGHER
MUSSELSHELL
CUSTER
FALLON
GRANITE
POWELL
WHEATLAND
RAVALLI
JEFFERSON
BROAD WATER
TREASURE
GOLDEN VALLEY
DEER LODGE
SILVER BOW
PARK
SWEET GRASS
STILL WATER
YELLOWSTONE
CARTER
BIG HORN
BEAVERHEAD
MADISON
GALLATIN
POWDER RIVER
CARBON
YELLOWSTONE NATIONAL PARK

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	56
2. Number of counties with crude oil and/or gas production	28
3. Total land area (acres)	93,175,680
4. Area proved productive of crude oil and/or gas (acres)	1,003,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	41,020,000
6. Percent of total land area productive or leased	45.1%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$6,220,410
8. Average field price of crude oil per barrel in 1982	$31.24
9. Wellhead value of crude oil produced in 1982 (thous.)	$965,972
10. Wellhead value of natural gas produced in 1982 (thous.)	$132,325
11. Total wellhead value of oil and gas in 1982 (thous.)	$1,098,297
12. Percent of petroleum value to total all minerals	60.7%
13. Principal mineral products in order of value: 1st . . . . Crude oil 2nd . . . . Coal 3rd . . . . Natural gas	
14. Number of employees engaged in oil and gas production	5,482
15. First year of crude oil production	1916
First year of natural gas production	1915
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1916	45,000
Natural gas (Mcf) . . . . . . in 1915	6
17. Geophysical activity — crew months worked in 1982	224

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1968
19. Crude oil produced in peak year (barrels) 48,460,000
20. Percent of crude oil produced by stripper wells 8.9%
21. Number of producing wells at end of 1982: Crude oil 4,311
    Gas and gas distillate 2,069
    Total 6,380
22. Average daily production of crude oil per well at end of 1982 20 b/d
23. Percent of wells on artificial lift ... 91.8%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	82,074	1,644*	83,718
1980	80,831	2,150*	82,981
1981	84,419	2,500*	86,919
1982	84,715	2,500*	87,215

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	62	8	70	−420
Estimated production	32	1	33	−46
Net change in reserves	30	7	37	−466

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	1,325	45	1,370	2,810
Total production	1,109	27	1,136	1,940
Proved reserves, Dec. 31, 1982	216	18	234	870

EXPLORATION AND DEVELOPMENT

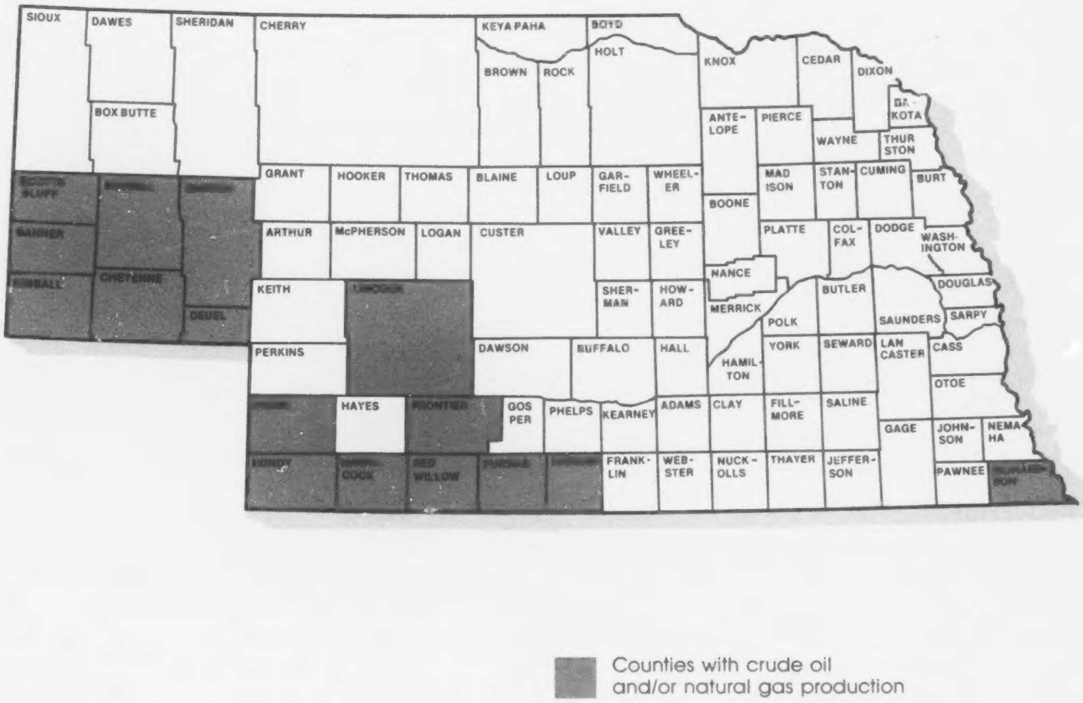
27. Rotary drilling rigs active in 1982 (average) 36
28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Crude oil 13,012
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 17,379
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	77	18.0
Gas wells	39	9.2
Dry holes	311	72.8
Total wells	427	100.0
Average depth per well (feet)		6,652
Total footage		2,840,513
Development Wells		
Oil wells	345	44.4
Gas wells	211	27.2
Dry holes	199	25.6
Service wells	22	2.8
Total wells	777	100.0
Average depth per well (feet)		3,958
Total footage		3,075,054
Total Wells		
Oil wells	422	35.0
Gas wells	250	20.8
Dry holes	510	42.4
Service wells	22	1.8
Total wells	1,204	100.0
Average depth per well (feet)		4,913
Total footage		5,915,567

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	9,743	36.8
Gas wells	3,949	14.9
Dry holes	12,799	48.3
Total wells	26,491	100.0

NEBRASKA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ANTELOPE
PIERCE
WAYNE
THURSTON
GRANT
HOOKER
THOMAS
BLAINE
LOUP
GARFIELD
WHEELER
MADISON
STANTON
CUMING
BURT
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ARTHUR
McPHERSON
LOGAN
CUSTER
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KEARNEY
ADAMS
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FILLMORE
SALINE
GAGE
JOHNSON
NEMAHA
COCK
RED WILLOW
FRANKLIN
WEBSTER
NUCKOLLS
THAYER
JEFFERSON
PAWNEE

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	93
2. Number of counties with crude oil and/or gas production	16
3. Total land area (acres)	48,949,120
4. Area proved productive of crude oil and/or gas (acres)	331,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	14,085,000
6. Percent of total land area productive or leased	29.5%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$1,963,448
8. Average field price of crude oil per barrel in 1982	$30.97
9. Wellhead value of crude oil produced in 1982 (thous.)	$212,826
10. Wellhead value of natural gas produced in 1982 (thous.)	$5,500
11. Total wellhead value of oil and gas in 1982 (thous.)	$218,326
12. Percent of petroleum value to total all minerals	74.7%
13. Principal mineral products in order of value: 1st .... Crude oil 2nd .... Sand and gravel 3rd .... Crushed stone	
14. Number of employees engaged in oil and gas production	1,037
15. First year of crude oil production	1939
First year of natural gas production	1949
16. First recorded production of:	
Crude oil (barrels) ..... in 1939	2,000
Natural gas (Mcf) ..... in 1951	20,000
17. Geophysical activity — crew months worked in 1982	20

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1962
19. Crude oil produced in peak year (barrels) 24,894,000
20. Percent of crude oil produced by stripper wells 37.6%
21. Number of producing wells at end of 1982: Crude oil 2,006
    Gas and gas distillate 22
    Total 2,028
22. Average daily production of crude oil per well at end of 1982 9.5 b/d
23. Percent of wells on artificial lift... 100%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	16,625	274*	16,889
1980	17,049	250*	17,299
1981	18,277	250*	18,527
1982	18,827	250*	19,077

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	−4	N.A.	−4	N.A.
Estimated production	5	N.A.	5	N.A.
Net change in reserves	−9	N.A.	−9	N.A.

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	439	N.A.	439	N.A.
Total production	407	N.A.	407	N.A.
Proved reserves, Dec. 31, 1982	32	N.A.	32	N.A.

EXPLORATION AND DEVELOPMENT

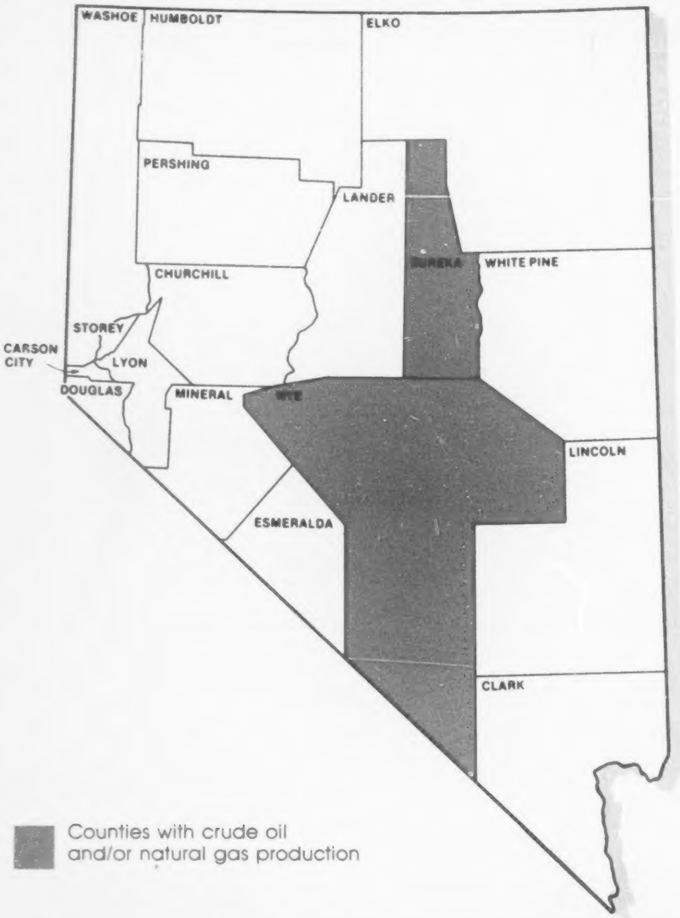
27. Rotary drilling rigs active in 1982 (average) 9
28. Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil 7,438
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 9,971
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	44	19.4
Gas wells	3	1.3
Dry holes	180	79.3
Total wells	227	100.0
Average depth per well (feet)		4,499
Total footage		1,021,259
Development Wells		
Oil wells	144	63.7
Gas wells	6	2.7
Dry holes	71	31.4
Service wells	5	2.2
Total wells	226	100.0
Average depth per well (feet)		4,594
Total footage		1,038,180
Total Wells		
Oil wells	188	41.5
Gas wells	9	2.0
Dry holes	251	55.4
Service wells	5	1.1
Total wells	453	100.0
Average depth per well (feet)		4,546
Total footage		2,059,439

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	4,859	30.4
Gas wells	190	1.2
Dry holes	10,909	68.4
Total wells	15,958	100.0

NEVADA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CHURCHILL
STOREY
CARSON CITY
LYON
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MINERAL
NYE
LINCOLN
ESMERALDA
CLARK
▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	16
2. Number of counties with crude oil and/or gas production	2
3. Total land area (acres)	70,328,960
4. Area proved productive of crude oil and/or gas (acres)	4,600
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	31,642,000
6. Percent of total land area productive or leased	45%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$91,623
8. Average field price of crude oil per barrel in 1982	$23.95*
9. Wellhead value of crude oil produced in 1982 (thous.)	$14,680
10. Wellhead value of natural gas produced in 1982 (thous.)	Not Applicable

*Estimated

11. Total wellhead value of oil and gas in 1982 (thous.)	$14,680
12. Percent of petroleum value to total all minerals	2.8%
13. Principal mineral products in order of value:	
1st .... Gold	
2nd .... Barite	
3rd .... Silver	
14. Number of employees engaged in oil and gas production	575
15. First year of crude oil production	1954
16. First recorded production of: Crude oil (barrels) ..... in 1954	33,000
17. Geophysical activity — crew months worked in 1982	61

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1979
19. Crude oil produced in peak year (barrels) 1,233,000
20. Percent of crude oil produced by stripper wells . . . . Not Available
21. Number of producing wells at end of 1982: Crude oil 60
22. Average daily production of crude oil per well at end of 1982 28 b/d
23. Percent of wells on artificial lift... Not Applicable
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	3,384	0*	3,384
1980	2,404	0*	2,404
1981	1,918	0*	1,918
1982	1,679	0*	1,679

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found				
Estimated production	Not Available			
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found				
Total production	Not Available			
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

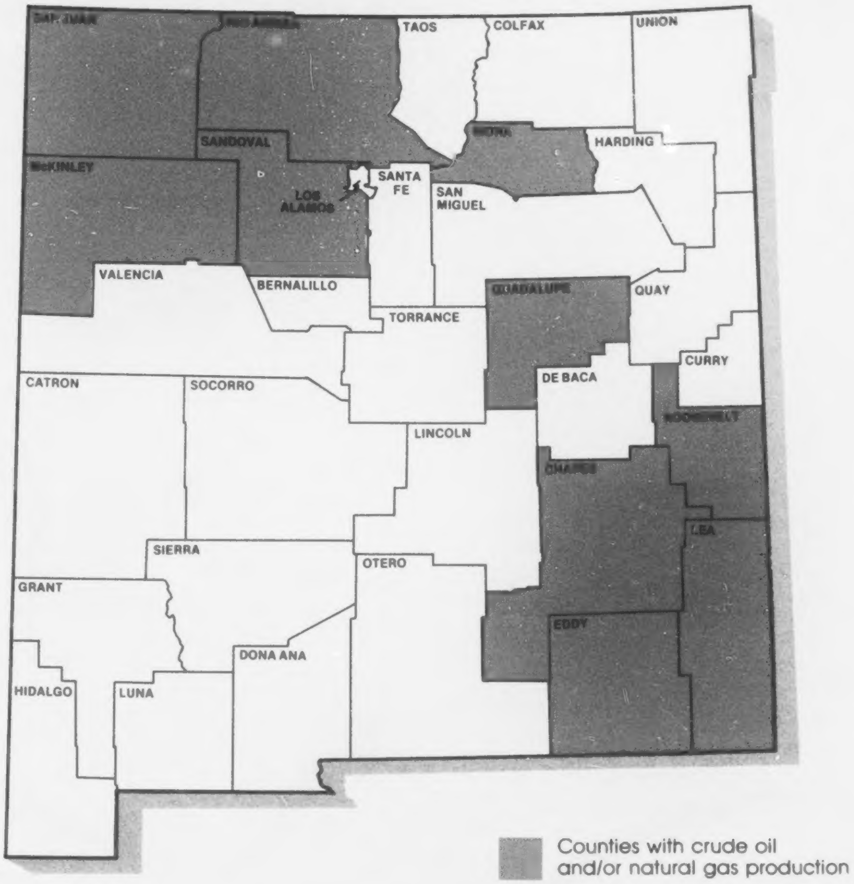
27. Rotary drilling rigs active in 1982 (average) 3
28. Deepest producing well drilled to Jan. 1, 1983 (feet) . . . Crude oil 8,581
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 19,562
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	1	4.2
Gas wells	0	0
Dry holes	23	95.8
Total wells	24	100.0
Average depth per well (feet)		5,789
Total footage		138,944
Development Wells		
Oil wells	2	40.0
Gas wells	0	0
Dry holes	0	0
Service wells	3	60.0
Total wells	5	100.0
Average depth per well (feet)		3,859
Total footage		19,293
Total Wells		
Oil wells	3	10.3
Gas wells	0	0
Dry holes	23	79.4
Service wells	3	10.3
Total wells	29	100.0
Average depth per well (feet)		5,456
Total footage		158,237

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	33	11.7
Gas wells	1	0.4
Dry holes	248	87.9
Total wells	282	100.0

NEW MEXICO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VALENCIA
BERNALILLO
GUADALUPE
QUAY
TORRANCE
CURRY
DE BACA
CATRON
SOCORRO
ROOSEVELT
LINCOLN
CHAVES
LEA
SIERRA
OTERO
GRANT
EDDY
DONA ANA
HIDALGO
LUNA
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	32
2.	Number of counties with crude oil and/or gas production	10
3.	Total land area (acres)	77,703,680
4.	Area proved productive of crude oil and/or gas (acres)	3,655,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	27,758,000
6.	Percent of total land area productive or leased	40.4%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$17,105,944
8.	Average field price of crude oil per barrel in 1982	$31.84
9.	Wellhead value of crude oil produced in 1982 (thous.)	$2,261,404
10.	Wellhead value of natural gas produced in 1982 (thous.)	$2,443,415
11.	Total wellhead value of oil and gas in 1982 (thous.)	$4,704,819
12.	Percent of petroleum value to total all minerals	82%
13.	Principal mineral products in order of value:	
	1st . . . . Natural gas	
	2nd . . . . Crude oil	
	3rd. . . . . Coal	
14.	Number of employees engaged in oil and gas production	15,431
15.	First year of crude oil production	1911
	First year of natural gas production	1924
16.	First recorded production of:	
	Crude oil (barrels) . . . . . in 1924	98,000
	Natural gas (Mcf) . . . . . in 1926	921
17.	Geophysical activity — crew months worked in 1982	156

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1969
19. Crude oil produced in peak year (barrels) 129,227,000
20. Percent of crude oil produced by stripper wells 18.8%
21. Number of producing wells at end of 1982: Crude oil 16,526
    Gas and gas distillate 16,025
    Total 32,551
22. Average daily production of crude oil per well at end of 1982 11.8 b/d
23. Percent of wells on artificial lift... 81.4%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	218,216	122,740*	340,956
1980	205,803	123,000*	328,803
1981	196,077	123,700*	319,777
1982	194,586	117,500*	312,086

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	77	17	94	−478
Estimated production	69	46	115	1,002
Net change in reserves	8	−29	−21	−1,480

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	5,523	1,590	7,113	47,552
Total production	4,960	1,059	6,019	34,470
Proved reserves, Dec. 31, 1982	563	531	1,094	13,082

EXPLORATION AND DEVELOPMENT

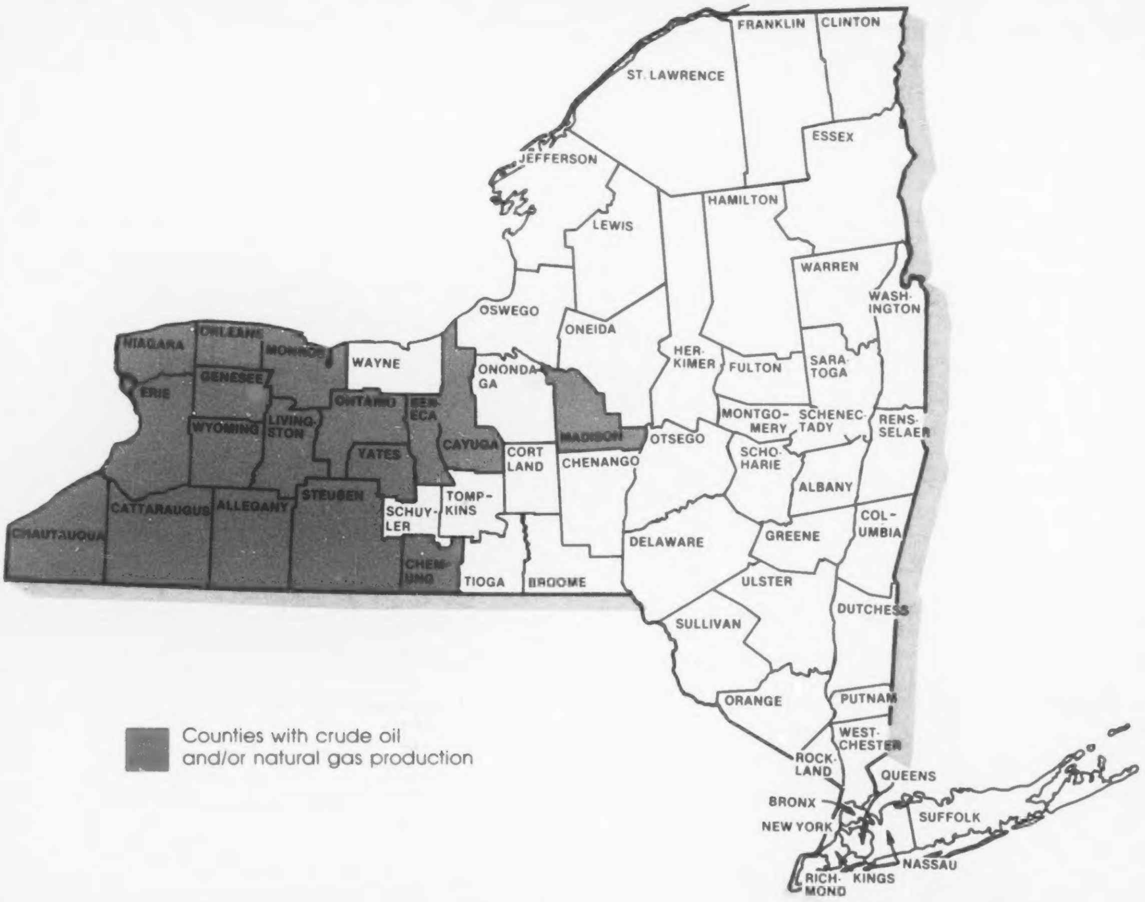
27. Rotary drilling rigs active in 1982 (average) 103
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas 17,544
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 22,926
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	61	17.4
Gas wells	74	21.1
Dry holes	216	61.5
Total wells	351	100.0
Average depth per well (feet)		5,994
Total footage		2,103,976
Development Wells		
Oil wells	663	34.1
Gas wells	1,032	53.0
Dry holes	187	9.6
Service wells	65	3.3
Total wells	1,947	100.0
Average depth per well (feet)		5,433
Total footage		10,577,958
Total Wells		
Oil wells	724	31.5
Gas wells	1,106	48.2
Dry holes	403	17.5
Service wells	65	2.8
Total wells	2,298	100.0
Average depth per well (feet)		5,519
Total footage		12,681,934

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	26,897	49.3
Gas wells	16,034	29.4
Dry holes	11,608	21.3
Total wells	54,539	100.0

NEW YORK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HERKIMER
FULTON
SARATOGA
GENESEE
ERIE
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ONTARIO
SENECA
WYOMING
LIVINGSTON
MONTGOMERY
SCHENECTADY
RENSSELAER
YATES
CAYUGA
CORTLAND
MADISON
OTSEGO
CHENANGO
SCHOHARIE
ALBANY
CATTARAUGUS
ALLEGANY
STEUBEN
SCHUYLER
TOMPKINS
CHAUTAUQUA
COLUMBIA
DELAWARE
GREENE
CHEMUNG
TIOGA
BROOME
ULSTER
DUTCHESS
SULLIVAN
ORANGE
PUTNAM
WESTCHESTER
ROCKLAND
QUEENS
BRONX
SUFFOLK
NEW YORK
NASSAU
RICHMOND
KINGS

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	62
2. Number of counties with crude oil and/or gas production	17
3. Total land area (acres)	30,611,840
4. Area proved productive of crude oil and/or gas (acres)	1,250,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	4,600,000
6. Percent of total land area productive or leased	19.1%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$902,308
8. Average field price of crude oil per barrel in 1982	$32.65*
9. Wellhead value of crude oil produced in 1982 (thous.)	$27,130
10. Wellhead value of natural gas produced in 1982 (thous.)	$43,785

*Estimated

11. Total wellhead value of oil and gas in 1982 (thous.)	$70,915
12. Percent of petroleum value to total all minerals	12.6%
13. Principal mineral products in order of value:	
1st	Crushed stone
2nd	Salt
3rd	Sand and gravel
14. Number of employees engaged in oil and gas production	2,484
15. First year of crude oil production	1865
First year of natural gas production	1885
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1865	100,000
Natural gas (Mcf) . . . . . in 1885	3,136,000
17. Geophysical activity — crew months worked in 1982	7

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1882
19. Crude oil produced in peak year (barrels) 6,685,000
20. Percent of crude oil produced by stripper wells 100%
21. Number of producing wells at end of 1982: Crude oil 5,320
    Gas and gas distillate 2,650
    Total 7,970
22. Average daily production of crude oil per well at end of 1982 0.3 b/d
23. Percent of wells on artificial lift... 100%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	2,342	0*	2,342
1980	2,301	0*	2,301
1981	2,304	0*	2,304
1982	2,277	0*	2,277

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found				−26
Estimated production		Not Available		9
Net change in reserves				−35

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found				835
Total production		Not Available		606
Proved reserves, Dec. 31, 1982				229

EXPLORATION AND DEVELOPMENT

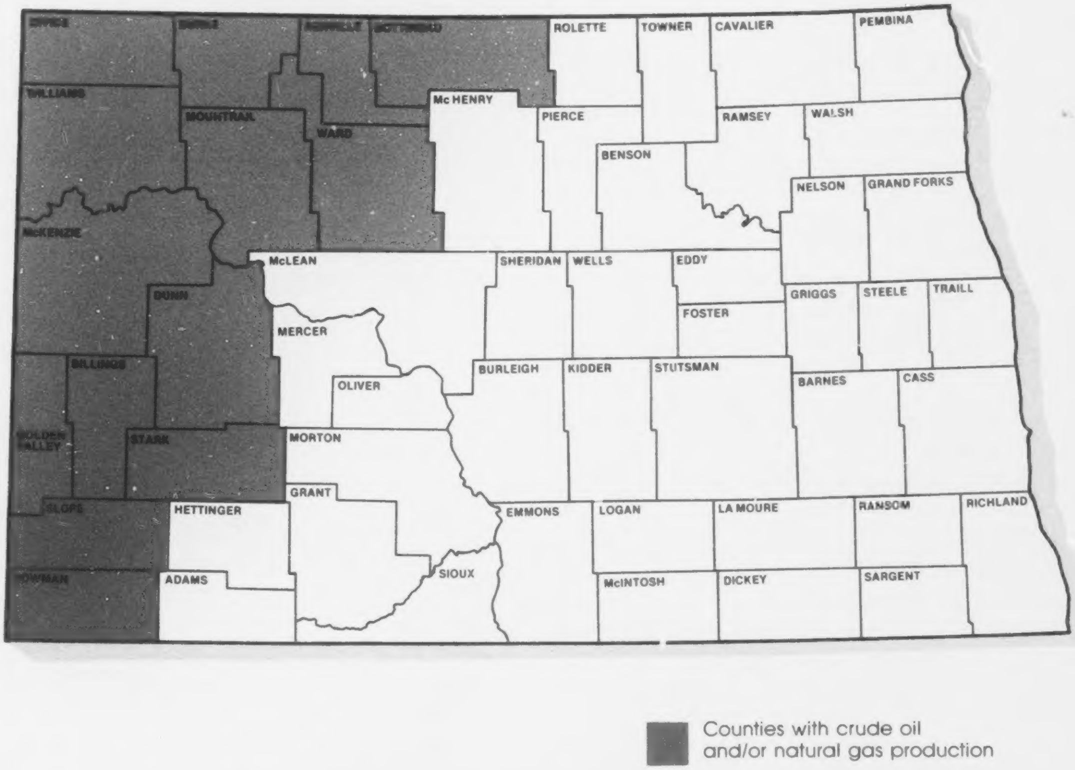
27. Rotary drilling rigs active in 1982 (average) 15
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas 5,425
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 13,500
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	1	2.3
Gas wells	37	84.1
Dry holes	6	13.6
Total wells	44	100.0
Average depth per well (feet)		3,684
Total footage		162,110
Development Wells		
Oil wells	54	11.2
Gas wells	419	87.1
Dry holes	7	1.5
Service wells	1	0.2
Total wells	481	100.0
Average depth per well (feet)		3,018
Total footage		1,451,459
Total Wells		
Oil wells	55	10.5
Gas wells	456	86.8
Dry holes	13	2.5
Service wells	1	0.2
Total wells	525	100.0
Average depth per well (feet)		3,074
Total footage		1,613,569

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	9,001	68.8
Gas wells	3,083	23.6
Dry holes	999	7.6
Total wells	13,083	100.0

NORTH DAKOTA



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RAMSEY
WALSH
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GRAND FORKS
McKENZIE
McLEAN
SHERIDAN
WELLS
EDDY
FOSTER
GRIGGS
STEELE
TRAILL
DUNN
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OLIVER
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BARNES
CASS
BILLINGS
GOLDEN VALLEY
STARK
MORTON
GRANT
SLOPE
HETTINGER
EMMONS
LOGAN
LA MOURE
RANSOM
RICHLAND
SIOUX
BOWMAN
ADAMS
McINTOSH
DICKEY
SARGENT
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	53
2.	Number of counties with crude oil and/or gas production	14
3.	Total land area (acres)	44,334,720
4.	Area proved productive of crude oil and/or gas (acres)	591,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	21,665,000
6.	Percent of total land area productive or leased	50.2%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$6,560,656
8.	Average field price of crude oil per barrel in 1982	$31.89
9.	Wellhead value of crude oil produced in 1982 (thous.)	$1,507,472
10.	Wellhead value of natural gas produced in 1982 (thous.)	$136,800
11.	Total wellhead value of oil and gas in 1982 (thous.)	$1,644,272
12.	Percent of petroleum value to total all minerals	90.9%
13.	Principal mineral products in order of value: 1st . . . . . Crude oil 2nd . . . . . Coal 3rd . . . . . Natural gas	
14.	Number of employees engaged in oil and gas production	7,857
15.	First year of crude oil production	1951
	First year of natural gas production	1907
16.	First recorded production of:	
	Crude oil (barrels) . . . . . in 1951	25,000
	Natural gas (Mcf) . . . . . in 1928	200
17.	Geophysical activity — crew months worked in 1982	252

PRODUCTION AND RESERVES

18. Year of peak crude oil production	1982
19. Crude oil produced in peak year (barrels)	47,271,000
20. Percent of crude oil produced by stripper wells	3%
21. Number of producing wells at end of 1982: Crude oil	2,870
Gas and gas distillate	66
Total	2,936
22. Average daily production of crude oil per well at end of 1982	43.8 b/d
23. Percent of wells on artificial lift...	72.1%

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	84,696	6,027*	90,723
1980	110,210	6,600*	116,810
1981	124,449	6,500*	130,949
1982	129,510	11,500*	141,010

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	58	8	66	99
Estimated production	44	5	49	57
Net change in reserves	14	3	17	42

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	917	142	1,059	1,707
Total production	680	71	751	1,011
Proved reserves, Dec. 31, 1982	237	71	308	696

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average)	69
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas	14,636
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	15,380

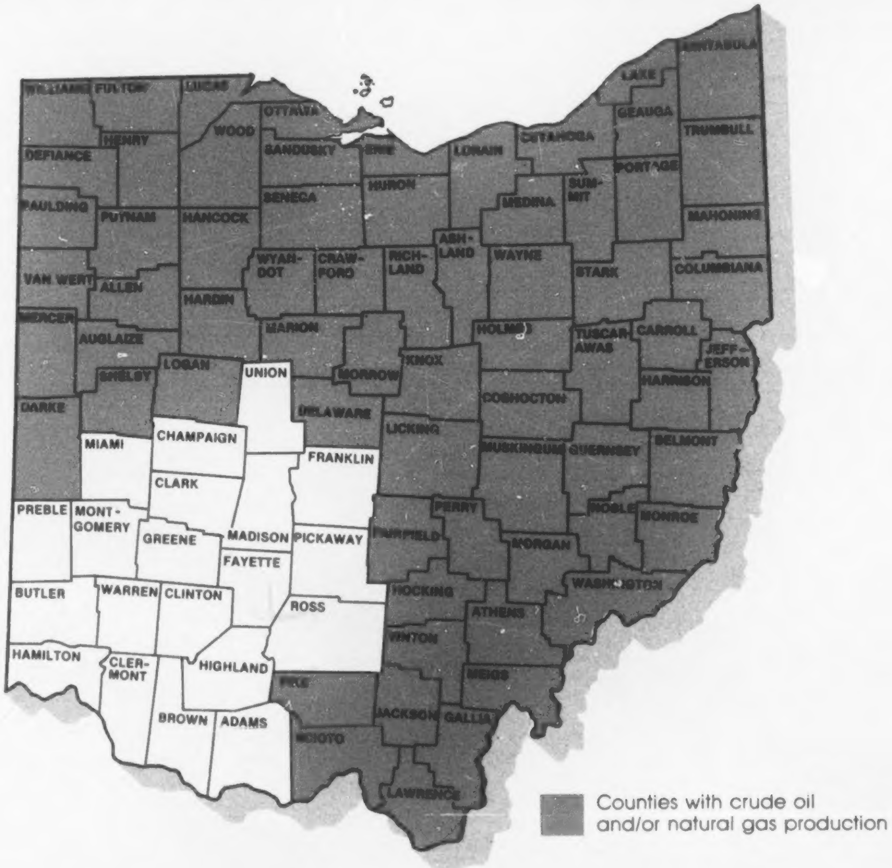
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	153	34.2
Gas wells	20	4.5
Dry holes	275	61.3
Total wells	448	100.0
Average depth per well (feet)		10,885
Total footage		4,876,361
Development Wells		
Oil wells	270	73.3
Gas wells	5	1.4
Dry holes	92	25.0
Service wells	1	0.3
Total wells	368	100.0
Average depth per well (feet)		8,905
Total footage		3,277,178
Total Wells		
Oil wells	423	51.8
Gas wells	25	3.1
Dry holes	367	45.0
Service wells	1	0.1
Total wells	816	100.0
Average depth per well (feet)		9,992
Total footage		8,153,539

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	4,399	49.8
Gas wells	83	0.9
Dry holes	4,359	49.3
Total wells	8,841	100.0

OHIO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OTTAWA
WOOD
HENRY
DEFIANCE
SANDUSKY
ERIE
LORAIN
CUYAHOGA
LAKE
ASHTABULA
GEAUGA
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PUTNAM
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WYANDOT
CRAWFORD
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HIGHLAND
PIKE
MEIGS
BROWN
ADAMS
JACKSON
GALLIA
SCIOTO
LAWRENCE
▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	88
2.	Number of counties with crude oil and/or gas production	68
3.	Total land area (acres)	26,224,000
4.	Area proved productive of crude oil and/or gas (acres)	3,076,994
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	13,371,310
6.	Percent of total land area productive or leased	62.7%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$3,602,577
8.	Average field price of crude oil per barrel in 1982	$30.90
9.	Wellhead value of crude oil produced in 1982 (thous.)	$450,244
10.	Wellhead value of natural gas produced in 1982 (thous.)	$318,500
11.	Total wellhead value of oil and gas in 1982 (thous.)	$768,744
12.	Percent of petroleum value to total all minerals	32.5%
13.	Principal mineral products in order of value: 1st . . . . Coal 2nd . . . . Crude oil 3rd . . . . Natural gas	
14.	Number of employees engaged in oil and gas production	12,548
15.	First year of crude oil production	1860
	First year of natural gas production	1884
16.	First recorded production of: Crude oil (barrels) . . . . . in 1876 Natural gas (Mcf) . . . . . in 1884	 32,000 800
17.	Geophysical activity — crew months worked in 1982	3

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1896
19. Crude oil produced in peak year (barrels) 23,941,000
20. Percent of crude oil produced by stripper wells 70%
21. Number of producing wells at end of 1982: Crude oil 24,752
    Gas and gas distillate 21,070
    Total 45,822
22. Average daily production of crude oil per well at end of 1982 1.4 b/d
23. Percent of wells on artificial lift... 98.1%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	32,748	0*	32,748
1980	35,322	0*	35,322
1981	37,126	0*	37,126
1982	39,921	0*	39,921

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	12	0	12	276
Estimated production	13	0	13	99
Net change in reserves	−1	0	−1	177

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	999	8	1,007	7,066
Total production	888	8	896	5,924
Proved reserves, Dec. 31, 1982	111	0	111	1,142

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average) 57
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas 8,488
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 11,442
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	33	22.6
Gas wells	85	58.2
Dry holes	28	19.2
Total wells	146	100.0
Average depth per well (feet)		3,418
Total footage		499,045
Development Wells		
Oil wells	1,675	38.3
Gas wells	2,436	55.8
Dry holes	250	5.7
Service wells	8	0.2
Total wells	4,369	100.0
Average depth per well (feet)		3,433
Total footage		15,000,932
Total Wells		
Oil wells	1,708	37.8
Gas wells	2,521	55.8
Dry holes	278	6.2
Service wells	8	0.2
Total wells	4,515	100.0
Average depth per well (feet)		3,433
Total footage		15,499,977

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	67,688	46.2
Gas wells	42,894	29.3
Dry holes	35,819	24.5
Total wells	146,401	100.0

Pool crew travels 20,000 miles to finish 11 tough Mid-Continent jobs in only 10 months.

WELL DONE.

Crew Chief Virgil Rolen and the crew on Rig 408 believe in giving the operator a full day's work. In a recent 10-month period, they completed four workovers, six completions and a tubing job in Dewey, Custer, Harper, Ellis, Washita and Roger Mills counties as well as Ochletree County in Texas. The wells ranged from 7,500 to 15,000 feet and most required BOPs. All but one were for the same customer.

Eleven jobs in 10 months is especially impressive considering that this crew *only* gets the tough jobs. The major operator for whom they do most of their work often reassigns jobs to put Virgil's crew on the tough ones — regardless of where the job is located.

Virgil and his crew usually begin their day at 5 a.m. and don't get back to Woodward until 9 or 10 that night. And their customers don't pay for travel time.

Why are Pool crews so good at working Mid-Continent wells? Maybe it's a result of continuing training and safety programs. Maybe it's because a computerized maintenance system helps to keep Pool equipment in top shape. Or maybe it's our commitment to the individual customer and our desire to meet his needs.

The next time you have a tough job that requires a special effort, give us a call at 405/256-3356. Pool crews won't leave a job until your well is done — and done well.

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State & Local Severance And Production Taxes Paid In 1982

Alabama	$ 58,035,555
Alaska	1,581,116,509
Arkansas	24,602,370
California	5,123,528
Colorado	23,251,282
Florida	63,743,394
Indiana	1,764,422
Kansas	1,176,375
Kentucky	13,736,993
Louisiana	971,677,140
Maryland	2,399
Michigan	83,805,000
Mississippi	113,669,168
Montana	50,075,162
Nebraska	5,969,424
Nevada	2,688
New Mexico	348,436,852
North Dakota	76,138,189
Ohio	1,332,918
Oklahoma	744,628,676
Oregon	427,370,000
South Dakota	1,707,446
Tennessee	931,076
Texas	2,373,846,250
Utah	22,295,889
West Virginia	39,762,342
Wyoming	257,525,906
Total U.S.	$7,291,726,953

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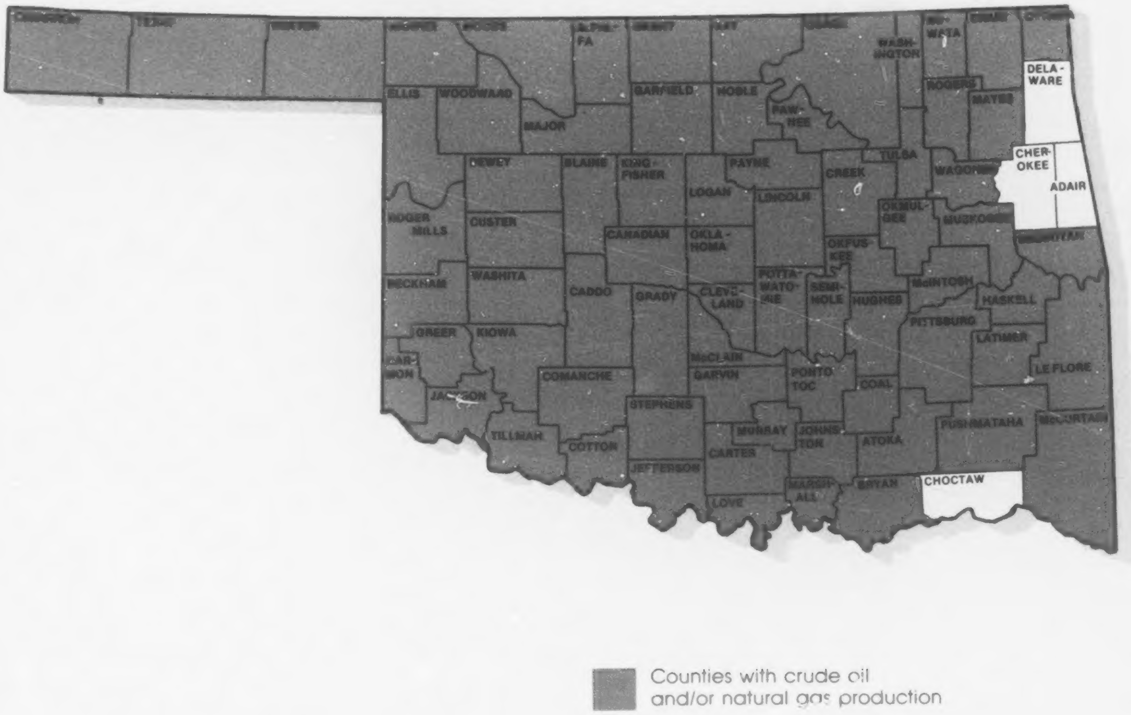
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WOODWARD
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TILLMAN
COMANCHE
COTTON
CADDO
BLAINE
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STEPHENS
JEFFERSON
ALFAL-FA
GARFIELD
NOBLE
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WAGONER
OKMUL-GEE
MUSKOGEE
McINTOSH
HASKELL
PITTSBURG
LATIMER
LE FLORE
PUSHMATAHA
McCURTAIN
CHOCTAW
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	77
2. Number of counties with crude oil and/or gas production	73
3. Total land area (acres)	44,020,480
4. Area proved productive of crude oil and/or gas (acres)	4,491,600
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	13,200,000
6. Percent of total land area productive or leased	40.2%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$47,443,273
8. Average field price of crude oil per barrel in 1982	$32.04
9. Wellhead value of crude oil produced in 1982 (thous.)	$5,082,217
10. Wellhead value of natural gas produced in 1982 (thous.)	$5,222,970
11. Total wellhead value of oil and gas in 1982 (thous.)	$10,305,187
12. Percent of petroleum value to total all minerals	96%
13. Principal mineral products in order of value: 1st . . . Natural gas 2nd . . . Crude oil 3rd . . . Coal	
14. Number of employees engaged in oil and gas production	102,227
15. First year of crude oil production	1891
First year of natural gas production	1902
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1891	30
Natural gas (Mcf) . . . . . in 1906	3,520
17. Geophysical activity — crew months worked in 1982	256

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1927
19. Crude oil produced in peak year (barrels) 277,775,000
20. Percent of crude oil produced by stripper wells 54%
21. Number of producing wells at end of 1982: Crude oil 91,745
    Gas and gas distillate 20,742
    Total 112,487
22. Average daily production of crude oil per well at end of 1982 4.9 b/d
23. Percent of wells on artificial lift... 94.4%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	393,540	138,082*	531,622
1980	410,219	146,500*	556,719
1981	422,071	143,200*	565,271
1982	434,578	140,000*	574,578

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	159	191	350	3,363
Estimated production	138	77	215	1,730
Net change in reserves	21	114	135	1,663

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	13,221	3,274	16,495	73,067
Total production	12,250	2,529	14,779	55,927
Proved reserves, Dec. 31, 1982	971	745	1,716	17,140

EXPLORATION AND DEVELOPMENT

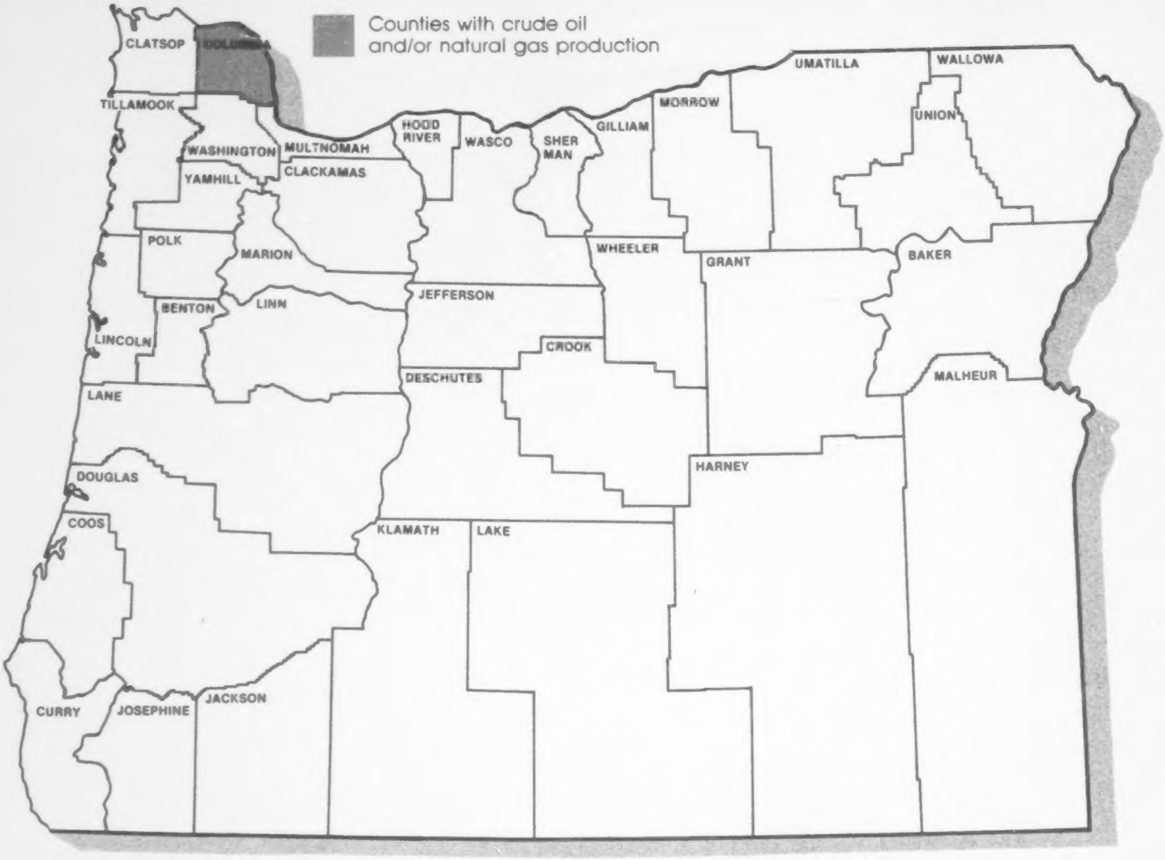
27. Rotary drilling rigs active in 1982 (average) 622
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas 24,969
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 31,441
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	141	20.7
Gas wells	151	22.1
Dry holes	390	57.2
Total wells	682	100.0
Average depth per well (feet)		8,417
Total footage		5,740,407
Development Wells		
Oil wells	5,890	52.0
Gas wells	2,462	21.7
Dry holes	2,953	26.1
Service wells	25	0.2
Total wells	11,330	100.0
Average depth per well (feet)		5,103
Total footage		57,815,593
Total Wells		
Oil wells	6,031	50.2
Gas wells	2,613	21.8
Dry holes	3,343	27.8
Service wells	25	0.2
Total wells	12,012	100.0
Average depth per well (feet)		5,291
Total footage		63,556,000

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	214,994	60.4
Gas wells	38,830	10.9
Dry holes	102,301	28.7
Total wells	356,125	100.0

OREGON


Counties with crude oil and/or natural gas production
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TILLAMOOK
WASHINGTON
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HOOD RIVER
WASCO
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
YAMHILL
CLACKAMAS
POLK
MARION
WHEELER
GRANT
BAKER
BENTON
LINN
JEFFERSON
LINCOLN
CROOK
DESCHUTES
MALHEUR
LANE
HARNEY
DOUGLAS
COOS
KLAMATH
LAKE
CURRY
JOSEPHINE
JACKSON

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	36
2.	Number of counties with crude oil and/or gas production	1
3.	Total land area (acres)	62,067,840
4.	Area proved productive of crude oil and/or gas (acres)	1,500
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	9,000,000
6.	Percent of total land area productive or leased	14.5%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$39
8.	Average field price of crude oil per barrel in 1982	Not Available
9.	Wellhead value of crude oil produced in 1982 (thous.)	Not Applicable
10.	Wellhead value of natural gas produced in 1982 (thous.)	$15
11.	Total wellhead value of oil and gas in 1982 (thous.)	$15
12.	Percent of petroleum value to total all minerals	0.01%
13.	Principal mineral products in order of value: 1st .... Crushed stone 2nd .... Sand and gravel 3rd .... Gold	
14.	Number of employees engaged in oil and gas production	122
15.	First year of natural gas production	1979
16.	First recorded production of: Natural gas (Mcf) ......in 1979	15,160
17.	Geophysical activity — crew months worked in 1982	25

PRODUCTION AND RESERVES

18. Year of peak natural gas production	1981
19. Natural gas produced in peak year (Mcf)	12,774
20. Percent of crude oil produced by stripper wells................	Not Applicable
21. Number of producing wells at end of 1982:	
Gas and gas distillate	8
Total........................	8
22. Average daily production of natural gas per well at end of 1982 ....(Mcf)	1
23. Percent of wells on artificial lift...	Not Applicable

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	0	1*	1
1980	0	2*	2
1981	0	4*	4
1982	0	5*	5

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found				
Estimated production	Not Available			
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found				
Total production	Not Available			
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average)	1
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas	2,654
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	13,177

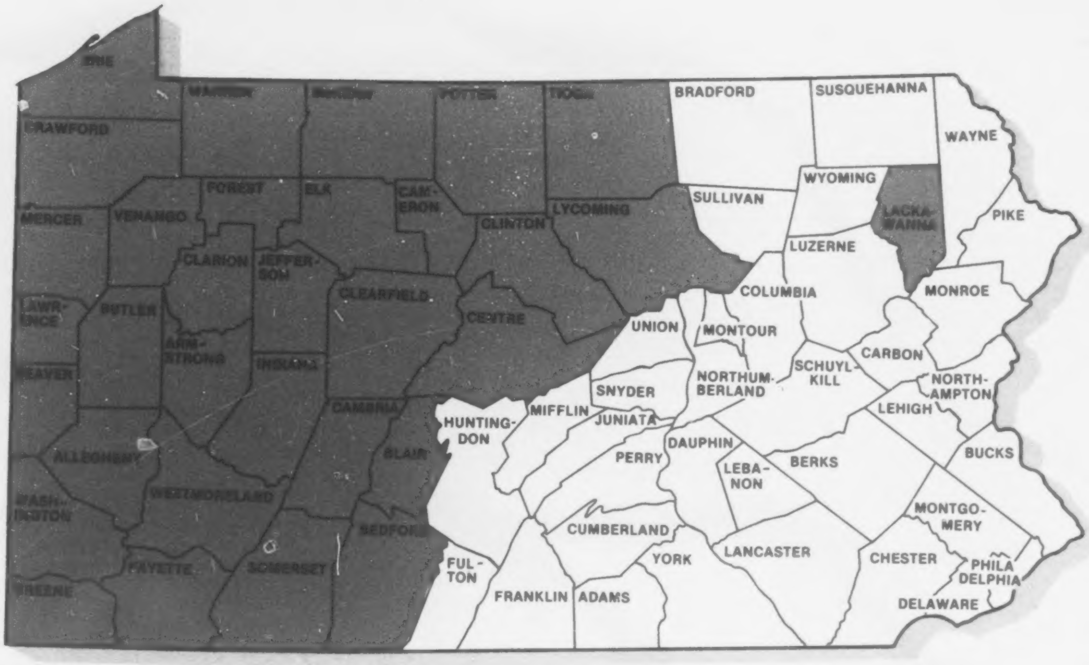
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	0	0
Gas wells	1	12.5
Dry holes	7	87.5
Total wells	8	100.0
Average depth per well (feet)		4,186
Total footage		33,488
Development Wells		
Oil wells	0	0
Gas wells	0	0
Dry holes	0	0
Service wells	0	0
Total wells	0	0
Average depth per well (feet)		0
Total footage		0
Total Wells		
Oil wells	0	0
Gas wells	1	12.5
Dry holes	7	87.5
Service wells	0	0
Total wells	8	100.0
Average depth per well (feet)		4,186
Total footage		33,488

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	0	0
Gas wells	11	3.8
Dry holes	281	96.2
Total wells	292	100.0

PENNSYLVANIA


ERIE
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McKEAN
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TIOGA
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SUSQUEHANNA
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FUL-
TON
YORK
CHESTER
PHILA
DELPHIA
GREENE
FRANKLIN
ADAMS
DELAWARE

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	67
2.	Number of counties with crude oil and/or gas production	32
3.	Total land area (acres)	28,778,240
4.	Area proved productive of crude oil and/or gas (acres)	2,851,770
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	14,688,390
6.	Percent of total land area productive or leased	60.9%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$3,482,931
8.	Average field price of crude oil per barrel in 1982	$32.35*
9.	Wellhead value of crude oil produced in 1982 (thous.)	$138,520
10.	Wellhead value of natural gas produced in 1982 (thous.)	$298,440

*Estimated

11.	Total wellhead value of oil and gas in 1982 (thous.)	$436,960
12.	Percent of petroleum value to total all minerals	11.3%
13.	Principal mineral products in order of value:	
	1st .... Coal	
	2nd .... Natural gas	
	3rd .... Portland cement	
14.	Number of employees engaged in oil and gas production	5,500
15.	First year of crude oil production	1859
	First year of natural gas production	1881
16.	First recorded production of:	
	Crude oil (barrels) ..... in 1859	2,000
	Natural gas (Mcf) ..... in 1882	600,000
17.	Geophysical activity — crew months worked in 1982	37

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1891
19. Crude oil produced in peak year (barrels) 31,424,000
20. Percent of crude oil produced by stripper wells 96.7%
21. Number of producing wells at end of 1982: Crude oil 25,285
    Gas and gas distillate 21,500
    Total 46,785
22. Average daily production of crude oil per well at end of 1982 0.3 b/d
23. Percent of wells on artificial lift... 99.7%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	7,874	110*	7,984
1980	7,243	100*	7,343
1981	10,216	100*	10,316
1982	11,732	100*	11,832

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found	8	0	8	267
Estimated production	3	0	3	102
Net change in reserves	5	0	5	165

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found	1,341	15	1,356	11,014
Total production	1,304	15	1,319	9,584
Proved reserves, Dec. 31, 1982	37	0	37	1,430

EXPLORATION AND DEVELOPMENT

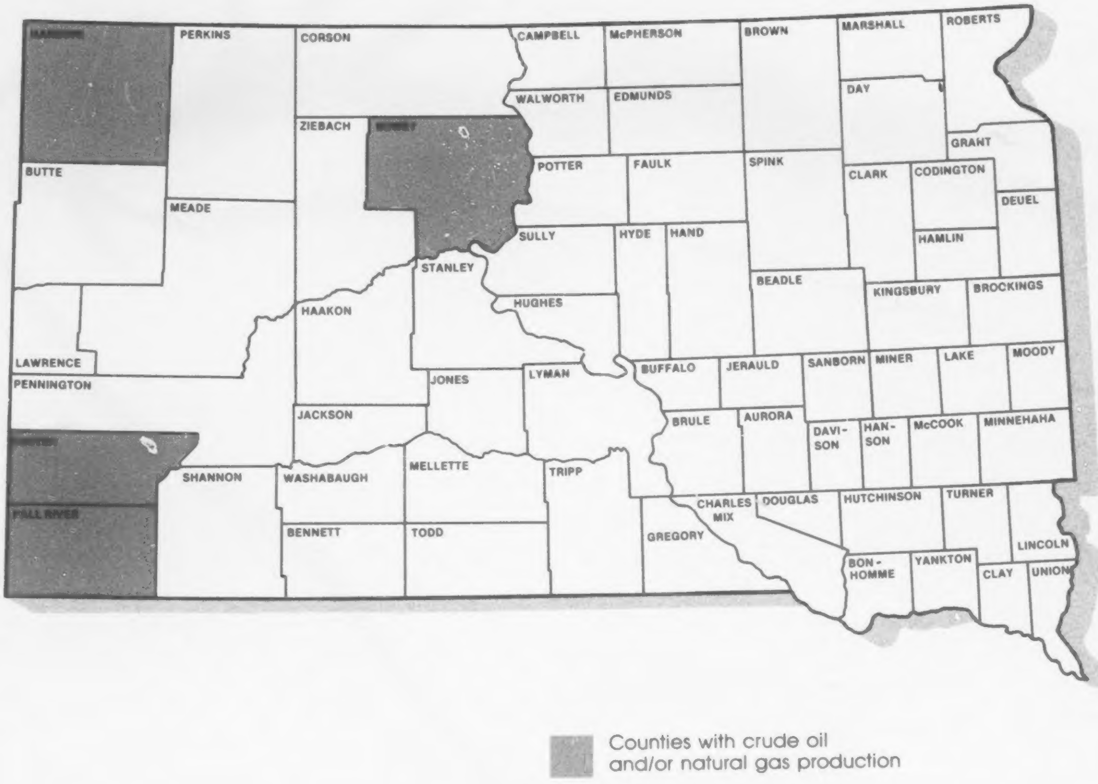
27. Rotary drilling rigs active in 1982 (average) 33
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas 11,458
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 21,460
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	23	10.7
Gas wells	157	73.4
Dry holes	34	15.9
Total wells	214	100.0
Average depth per well (feet)		4,267
Total footage		913,185
Development Wells		
Oil wells	2,176	54.3
Gas wells	1,577	39.3
Dry holes	75	1.9
Service wells	182	4.5
Total wells	4,010	100.0
Average depth per well (feet)		2,142
Total footage		8,587,044
Total Wells		
Oil wells	2,199	52.1
Gas wells	1,734	41.1
Dry holes	109	2.6
Service wells	182	4.2
Total wells	4,224	100.0
Average depth per well (feet)		2,249
Total footage		9,500,229

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	245,845	79.4
Gas wells	25,626	8.3
Dry holes	38,234	12.3
Total wells	309,705	100.0

SOUTH DAKOTA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LINCOLN
BON-HOMME
YANKTON
CLAY
UNION

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	67
2. Number of counties with crude oil and/or gas production	4
3. Total land area (acres)	48,611,200
4. Area proved productive of crude oil and/or gas (acres)	33,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	6,994,000
6. Percent of total land area productive or leased	14.5%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$148,367
8. Average field price of crude oil per barrel in 1982	$32.00*
9. Wellhead value of crude oil produced in 1982 (thous.)	$37,055
10. Wellhead value of natural gas produced in 1982 (thous.)	$3,100
11.* Total wellhead value of oil and gas in 1982 (thous.)	$40,155
12. Percent of petroleum value to total all minerals	17.2%
13. Principal mineral products in order of value:	
1st .... Gold	
2nd .... Crude oil	
3rd .... Portland cement	
14. Number of employees engaged in oil and gas production	160
15. First year of crude oil production	1953
First year of natural gas production	1899
16. First recorded production of:	
Crude oil (barrels) ..... in 1954	37,000
Natural gas (Mcf) ..... in 1906	22,900
17. Geophysical activity — crew months worked in 1982	9

*Estimated

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1982
19. Crude oil produced in peak year (barrels) 1,158,000
20. Percent of crude oil produced by stripper wells 4%
21. Number of producing wells at end of 1982: Crude oil 130
22. Average daily production of crude oil per well at end of 1982 23.1 b/d
23. Percent of wells on artificial lift... 100%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	2,318	137*	2,455
1980	2,090	150*	2,240
1981	2,666	150*	2,816
1982	3,173	150*	3,323

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found				
Estimated production	Not Available			
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found				
Total production	Not Available			
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

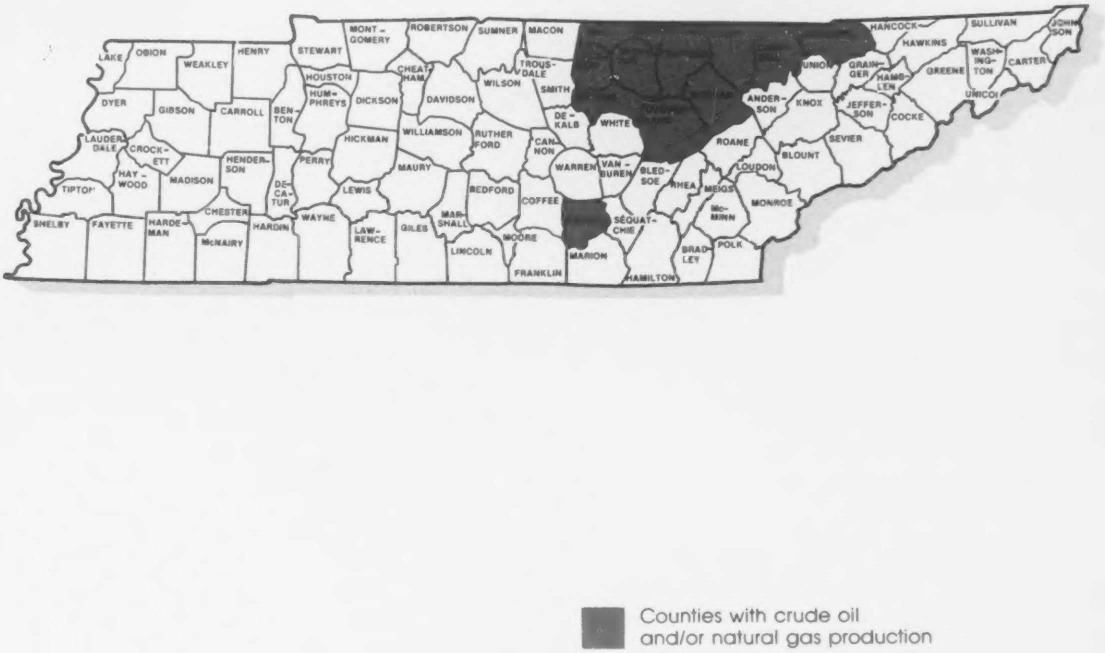
27. Rotary drilling rigs active in 1982 (average) 2
28. Deepest producing well drilled to Jan. 1, 1983 (feet) .... Crude oil 9,150
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 9,771
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	3	8.6
Gas wells	0	0
Dry holes	32	91.4
Total wells	35	100.0
Average depth per well (feet)		3,542
Total footage		123,984
Development Wells		
Oil wells	13	37.1
Gas wells	19	54.3
Dry holes	3	8.6
Service wells	0	0
Total wells	35	100.0
Average depth per well (feet)		3,833
Total footage		134,155
Total Wells		
Oil wells	16	22.9
Gas wells	19	27.1
Dry holes	35	50.0
Service wells	0	0
Total wells	70	100.0
Average depth per well (feet)		3,688
Total footage		258,139

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	159	16.7
Gas wells	56	5.9
Dry holes	737	77.4
Total wells	952	100.0

TENNESSEE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SEQUAT-CHIE
HAMILTON
BRAD-LEY
POLK

■ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	95
2. Number of counties with crude oil and/or gas production	12
3. Total land area (acres)	26,449,920
4. Area proved productive of crude oil and/or gas (acres)	28,500
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	8,500,000
6. Percent of total land area productive or leased	32.2%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$153,611
8. Average field price of crude oil per barrel in 1982	$32.10*
9. Wellhead value of crude oil produced in 1982 (thous.)	$36,335
10. Wellhead value of natural gas produced in 1982 (thous.)	$4,425

*Estimated

11. Total wellhead value of oil and gas in 1982 (thous.)	$40,760
12. Percent of petroleum value to total all minerals	0.9%
13. Principal mineral products in order of value:	
1st	Coal
2nd	Zinc
3rd	Crushed stone
14. Number of employees engaged in oil and gas production	895
15. First year of crude oil production	1860
First year of natural gas production	1889
16. First recorded production of:	
Crude oil (barrels) ..... in 1916	1,000
Natural gas (Mcf) ..... in 1905	1
17. Geophysical activity — crew months worked in 1982	24

PRODUCTION AND RESERVES

18. Year of peak crude oil production	1982
19. Crude oil produced in peak year (barrels)	1,132,000
20. Percent of crude oil produced by stripper wells	31.6%
21. Number of producing wells at end of 1982: Crude oil	650
Gas and gas distillate	360
Total	1,010
22. Average daily production of crude oil per well at end of 1982	3.1 b/d
23. Percent of wells on artificial lift...	81.5%

24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	1,682	0*	1,682
1980	2,030	0*	2,030
1981	2,515	0*	2,515
1982	3,101	0*	3,101

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
New reserves found				
Estimated production	Not Available			
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	*NGL* (million bbls.)	*Total Petroleum Liquids* (million bbls.)	*Natural Gas* (billion cu. ft.)
Total reserves found				
Total production	Not Available			
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

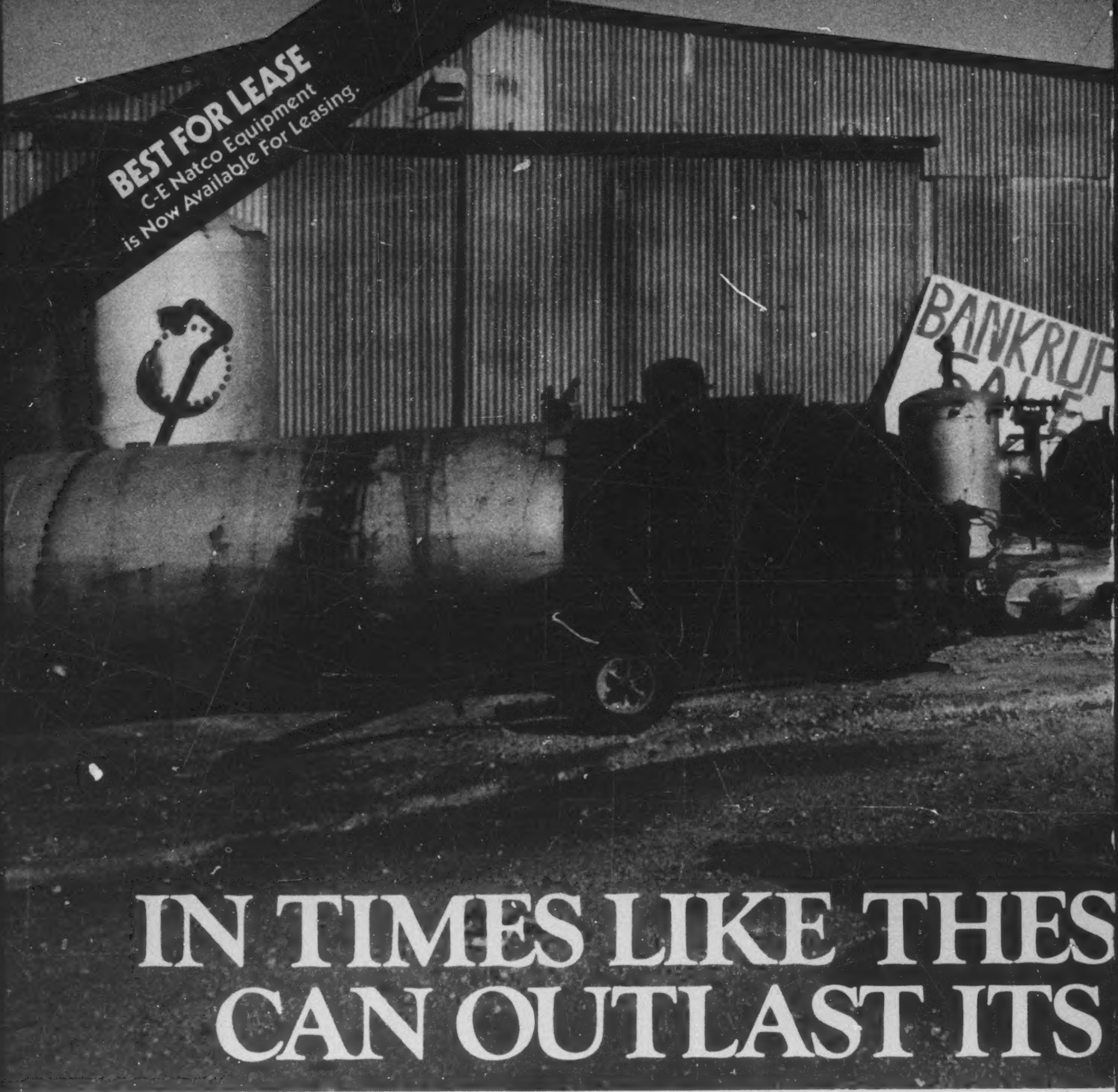
27. Rotary drilling rigs active in 1982 (average)	4
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas	3,059
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	10,478

30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	72	29.5
Gas wells	92	37.7
Dry holes	80	32.8
Total wells	244	100.0
Average depth per well (feet)		1,782
Total footage		434,699
Development Wells		
Oil wells	93	62.8
Gas wells	45	30.4
Dry holes	10	6.8
Service wells	0	0
Total wells	148	100.0
Average depth per well (feet)		1,662
Total footage		246,042
Total Wells		
Oil wells	165	42.1
Gas wells	137	34.9
Dry holes	90	23.0
Service wells	0	0
Total wells	392	100.0
Average depth per well (feet)		1,737
Total footage		680,741

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	1,165	27.0
Gas wells	942	21.8
Dry holes	2,215	51.2
Total wells	4,322	100.0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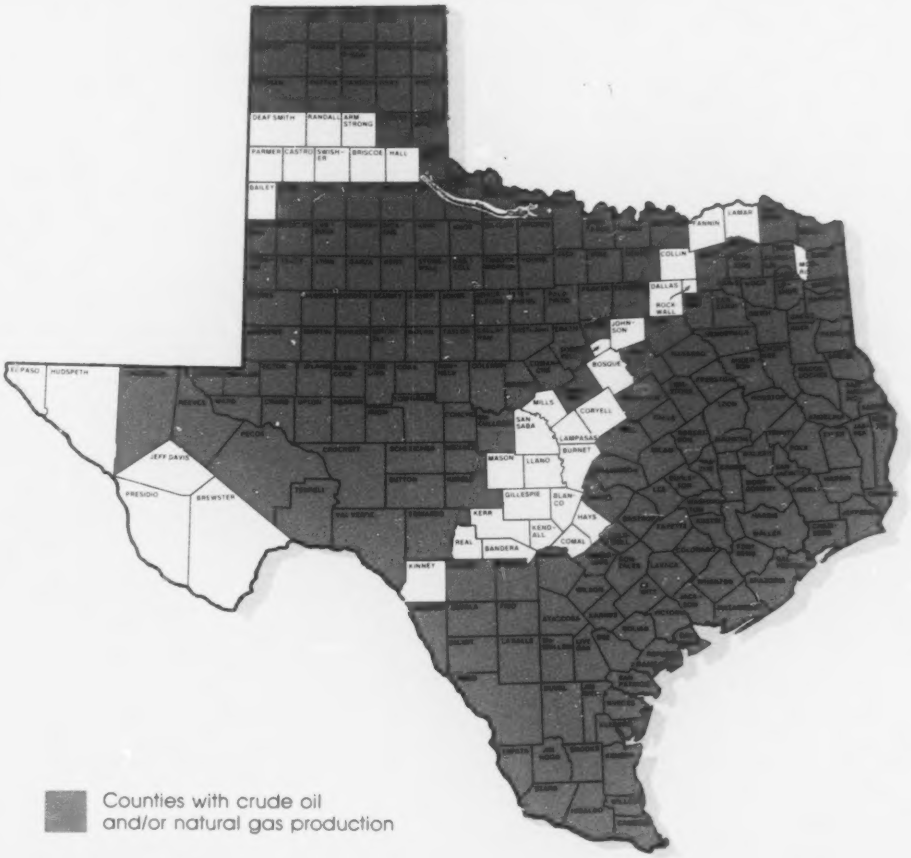
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MASON
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HAYS
KERR
KENDALL
COMAL
REAL
BANDERA
KINNEY
EL PASO
HUDSPETH
JEFF DAVIS
PRESIDIO
BREWSTER
Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	254
2. Number of counties with crude oil and/or gas production	215
3. Total land area (acres)	167,765,760
4. Area proved productive of crude oil and/or gas (acres)	12,475,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	52,248,000
6. Percent of total land area productive or leased	38.6%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$236,206,439
8. Average field price of crude oil per barrel in 1982	$31.81
9. Wellhead value of crude oil produced in 1982 (thous.)	$29,433,666
10. Wellhead value of natural gas produced in 1982 (thous.)	$14,041,550
11. Total wellhead value of oil and gas in 1982 (thous.)	$43,475,216
12. Percent of petroleum value to total all minerals	95.7%
13. Principal mineral products in order of value:	
1st .... Crude oil	
2nd .... Natural gas	
3rd .... Portland cement	
14. Number of employees engaged in oil and gas production	292,522
15. First year of crude oil production	1889
First year of natural gas production	1889
16. First recorded production of:	
Crude oil (barrels) ..... in 1890	48
Natural gas (Mcf) ..... in 1906	1,000
17. Geophysical activity — crew months worked in 1982	1,583

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1972
19. Crude oil produced in peak year (barrels) 1,301,154,000
20. Percent of crude oil produced by stripper wells 9.4%
21. Number of producing wells at end of 1982: Crude oil 187,626
    Gas and gas distillate 42,295
    Total 229,921
22. Average daily production of crude oil per well at end of 1982 13.5 b/d
23. Percent of wells on artificial lift... 91.3%
24. Average production (barrels per day):

	Crude Oil	*NGL*	*Total Petroleum Liquids*
1979	2,789,299	690,685*	3,479,984
1980	2,670,590	690,900*	3,361,490
1981	2,589,403	706,000*	3,295,403
1982	2,535,058	695,000*	3,230,058

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
New reserves found	389	447	836	5,831
Estimated production	866	322	1,188	6,388
Net change in reserves	−477	125	−352	−557

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil *(million bbls.)*	*NGL* *(million bbls.)*	*Total Petroleum Liquids* *(million bbls.)*	*Natural Gas* *(billion cu. ft.)*
Total reserves found	62,489	12,852	75,341	297,039
Total production	54,873	10,082	64,955	243,9[illegible]
Proved reserves, Dec. 31, 1982	7,616	2,770	10,386	53,131

EXPLORATION AND DEVELOPMENT

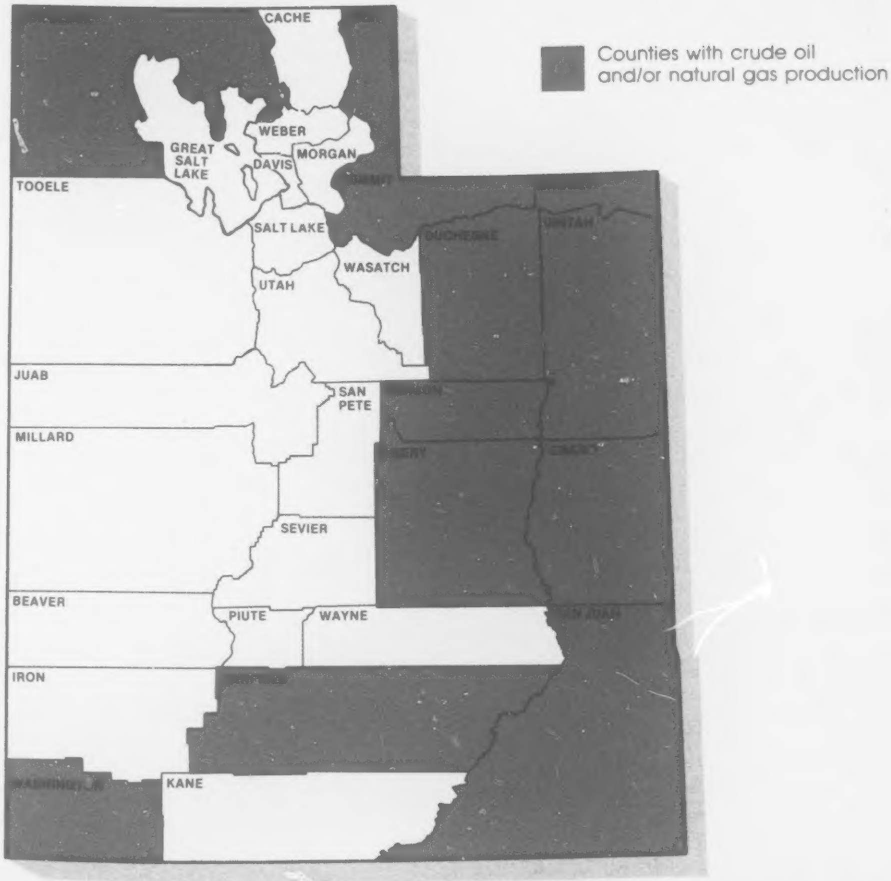
27. Rotary drilling rigs active in 1982 (average) 989
28. Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas 26,536
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 29,670
30. Wells and footage drilled in 1982:

	Number	*Percent*
Wildcat Wells		
Oil wells	689	12.6
Gas wells	985	18.1
Dry holes	3,781	69.3
Total wells	5,455	100.0
Average depth per well (feet)		6,449
Total footage		35,180,525
Development Wells		
Oil wells	13,162	61.5
Gas wells	3,360	15.7
Dry holes	4,176	19.5
Service wells	696	3.3
Total wells	21,394	100.0
Average depth per well (feet)		4,813
Total footage		102,977,509
Total Wells		
Oil wells	13,851	51.6
Gas wells	4,345	16.2
Dry holes	7,957	29.6
Service wells	696	2.6
Total wells	26,849	100.0
Average depth per well (feet)		5,146
Total footage		138,158,034

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	*Percent*
Oil wells	445,016	58.7
Gas wells	63,797	8.4
Dry holes	248,662	32.9
Total wells	757,475	100.0

UTAH


Counties with crude oil and/or natural gas production
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WEBER
GREAT SALT LAKE
DAVIS
MORGAN
SUMMIT
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SALT LAKE
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WASATCH
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MILLARD
SEVIER
BEAVER
PIUTE
WAYNE
SAN JUAN
IRON
WASHINGTON
KANE

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1.	Number of counties	29
2.	Number of counties with crude oil and/or gas production	12
3.	Total land area (acres)	52,541,440
4.	Area proved productive of crude oil and/or gas (acres)	400,000
5.	Estimated nonproductive area leased Jan. 1, 1983 (acres)	31,614,000
6.	Percent of total land area productive or leased	60.9%
7.	Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$5,150,699
8.	Average field price of crude oil per barrel in 1982	$30.48
9.	Wellhead value of crude oil produced in 1982 (thous.)	$683,971
10.	Wellhead value of natural gas produced in 1982 (thous.)	$163,100
11.	Total wellhead value of oil and gas in 1982 (thous.)	$847,071
12.	Percent of petroleum value to total all minerals	42.4%
13.	Principal mineral products in order of value: 1st . . . . . Crude oil 2nd . . . . . Copper 3rd . . . . . Coal	
14.	Number of employees engaged in oil and gas production	5,401
15.	First year of crude oil production	1907
	First year of natural gas production	1886
16.	First recorded production of: Crude oil (barrels) . . . . . in 1924 Natural gas (Mcf) . . . . . in 1927	 3,000 927
17.	Geophysical activity — crew months worked in 1982	127

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1975

19. Crude oil produced in peak year (barrels) 42,301,000

20. Percent of crude oil produced by stripper wells 1.4%

21. Number of producing wells at end of 1982: Crude oil 1,583
    Gas and gas distillate 282
    Total 1,865

22. Average daily production of crude oil per well at end of 1982 43 b/d

23. Percent of wells on artificial lift... 74.9%

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	75,967	7,945*	83,912
1980	68,246	8,000*	76,246
1981	70,849	9,000*	79,849
1982	61,479	9,000*	70,479

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	7	20	27	287
Estimated production	24	5	29	91
Net change in reserves	−17	15	−2	196

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	926	357	1,283	3,866
Total production	753	65	818	1,613
Proved reserves, Dec. 31, 1982	173	292	465	2,253

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average) 40

28. Deepest producing well drilled to Jan. 1, 1983 (feet) ... Crude oil 17,732

29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole 21,874

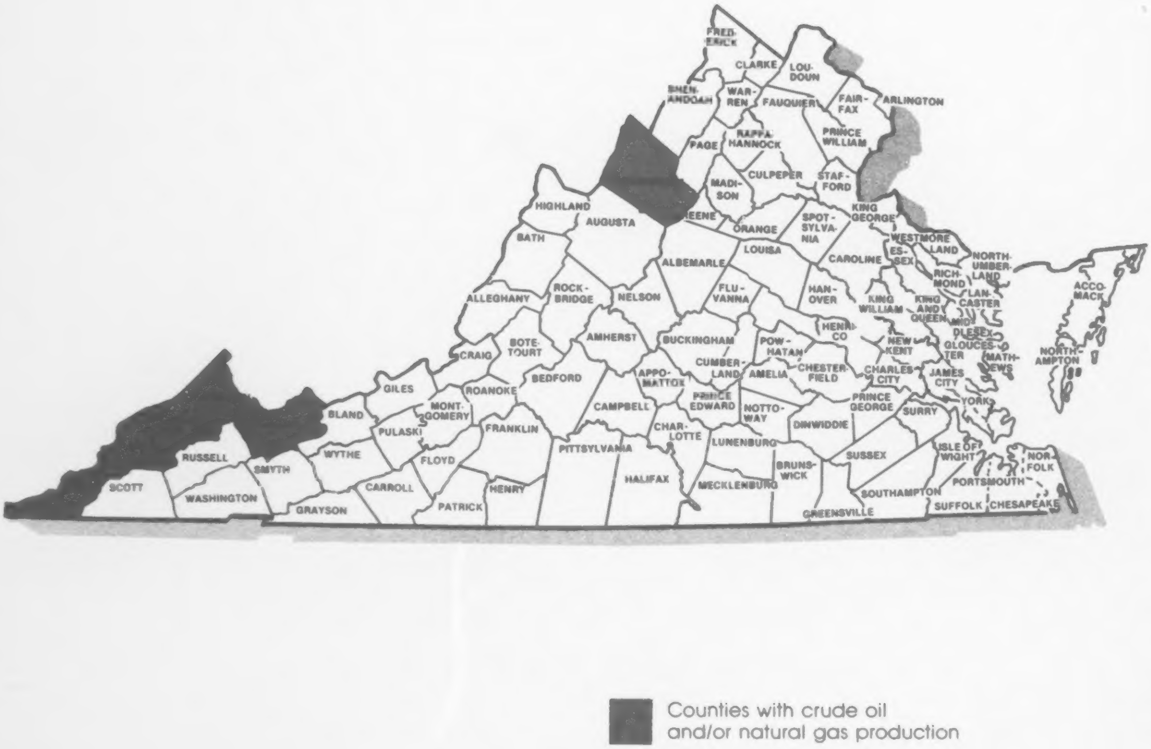
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	31	18.0
Gas wells	28	16.3
Dry holes	113	65.7
Total wells	172	100.0
Average depth per well (feet)		7,260
Total footage		1,248,747
Development Wells		
Oil wells	174	45.9
Gas wells	128	33.8
Dry holes	72	19.0
Service wells	5	1.3
Total wells	379	100.0
Average depth per well (feet)		6,094
Total footage		2,309,765
Total Wells		
Oil wells	205	37.2
Gas wells	156	28.3
Dry holes	185	33.6
Service wells	5	0.9
Total wells	551	100.0
Average depth per well (feet)		6,458
Total footage		3,558,512

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	2,687	38.7
Gas wells	1,049	15.1
Dry holes	3,210	46.2
Total wells	6,946	100.0

VIRGINIA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PATRICK
SUFFOLK
CHESAPEAKE
GREENSVILLE
■ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	96
2. Number of counties with crude oil and/or gas production	6
3. Total land area (acres)	25,459,200
4. Area proved productive of crude oil and/or gas (acres)	112,838
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	3,046,068
6. Percent of total land area productive or leased	12.4%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$3,508
8. Average field price of crude oil per barrel in 1982	$32.35*
9. Wellhead value of crude oil produced in 1982 (thous.)	$1,585
10. Wellhead value of natural gas produced in 1982 (thous.)	$19,250

*Estimated

11. Total wellhead value of oil and gas in 1982 (thous.)	$20,835
12. Percent of petroleum value to total all minerals	1.21%
13. Principal mineral products in order of value:	
1st ... Coal	
2nd ... Crushed stone	
3rd ... Lime	
14. Number of employees engaged in oil and gas production	300
15. First year of crude oil production	1943
First year of natural gas production	1931
16. First recorded production of:	
Crude oil (barrels) ..... in 1943	2,000
Natural gas (Mcf) ..... in 1949	80,000
17. Geophysical activity — crew months worked in 1982	17

PRODUCTION AND RESERVES

18.	Year of peak crude oil production	1947
19.	Crude oil produced in peak year (barrels)	61,000
20.	Percent of crude oil produced by stripper wells	100%
21.	Number of producing wells at end of 1982: Crude oil	Not Available
	Gas and gas distillate	290
	Total	290
22.	Average daily production of natural gas per well at end of 1982	Not Available
23.	Percent of wells on artificial lift...	Not Available

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	4	0*	4
1980	27	0*	27
1981	36	0*	36
1982	134	0*	134

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found				
Estimated production	Not Available			
Net change in reserves				

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found				
Total production	Not Available			
Proved reserves, Dec. 31, 1982				

EXPLORATION AND DEVELOPMENT

27.	Rotary drilling rigs active in 1982 (average)	3
28.	Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural Gas	7,238
29.	Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	17,003

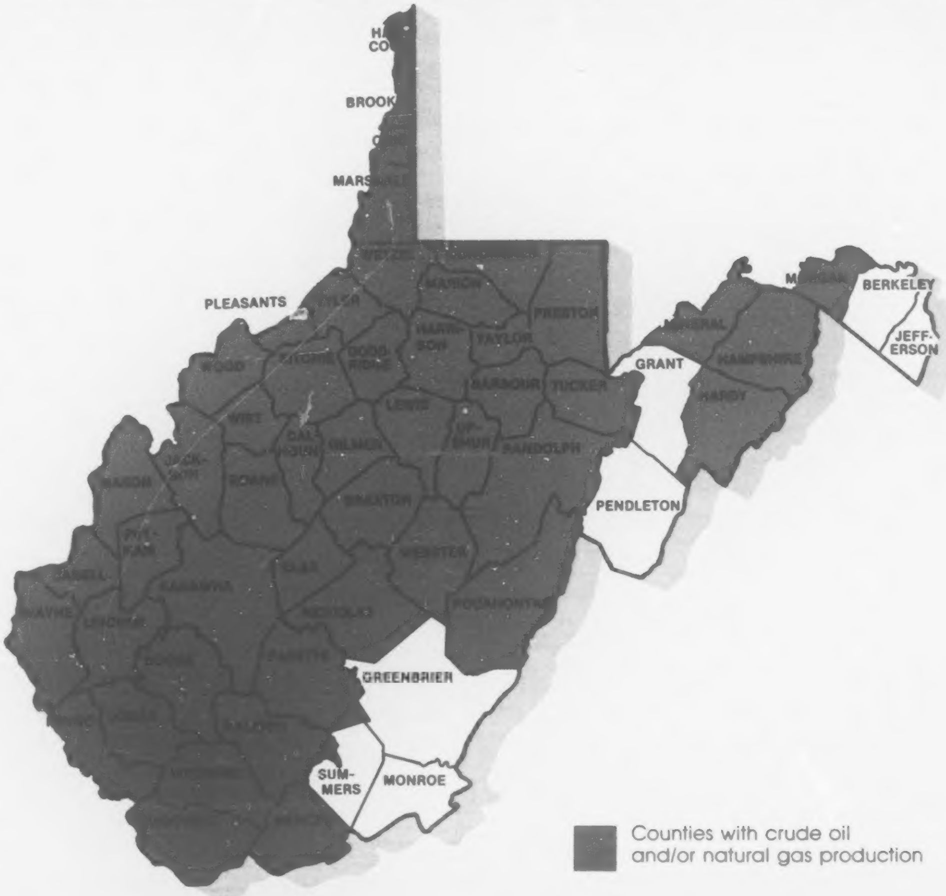
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	2	6.9
Gas wells	9	31.0
Dry holes	18	62.1
Total wells	29	100.0
Average depth per well (feet)		4,793
Total footage		139,006
Development Wells		
Oil wells	20	28.6
Gas wells	43	61.4
Dry holes	7	10.0
Service wells	0	0
Total wells	70	100.0
Average depth per well (feet)		4,217
Total footage		295,200
Total Wells		
Oil wells	22	22.2
Gas wells	52	52.5
Dry holes	25	25.3
Service wells	0	0
Total wells	99	100.0
Average depth per well (feet)		4,386
Total footage		434,206

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	43	8.5
Gas wells	345	68.6
Dry holes	115	22.9
Total wells	503	100.0

WEST VIRGINIA


BROOK
PLEASANTS
MORGAN
BERKELEY
JEFF-ERSON
GRANT
PRESTON
TAYLOR
PENDLETON
GREENBRIER
SUM-MERS
MONROE
▇ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	55
2. Number of counties with crude oil and/or gas production	48
3. Total land area (acres)	15,404,800
4. Area proved productive of crude oil and/or gas (acres)	7,528,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	5,919,000
6. Percent of total land area productive or leased	87.5%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$1,659,284
8. Average field price of crude oil per barrel in 1982	$32.72*
9. Wellhead value of crude oil produced in 1982 (thous.)	$105,587
10. Wellhead value of natural gas produced in 1982 (thous.)	$523,590
11. Total wellhead value of oil and gas in 1982 (thous.)	$629,177
12. Percent of petroleum value to total all minerals	12.6%
13. Principal mineral products in order of value:	
1st . . . . . Coal	
2nd . . . . . Natural gas	
3rd . . . . . Crude oil	
14. Number of employees engaged in oil and gas production	6,083
15. First year of crude oil production	1860
First year of natural gas production	1885
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1876	120,000
Natural gas (Mcf) . . . . . in 1885	450,000
17. Geophysical activity — crew months worked in 1982	9

*Estimated

PRODUCTION AND RESERVES

18. Year of peak crude oil production	1900
19. Crude oil produced in peak year (barrels)	16,196,000
20. Percent of crude oil produced by stripper wells	75%
21. Number of producing wells at end of 1982: Crude oil	14,900
Gas and gas distillate	28,350
Total	43,250
22. Average daily production of crude oil per well at end of 1982	0.5 b/d
23. Percent of wells on artificial lift...	100%

24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	6,592	15,068*	21,660
1980	6,383	16,500*	22,883
1981	9,515	16,500*	26,015
1982	8,841	16,000*	24,841

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	21	−1	20	450
Estimated production	3	5	8	142
Net change in reserves	18	−6	12	308

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	580	328	908	17,876
Total production	532	249	781	15,624
Proved reserves, Dec. 31, 1982	48	79	127	2,252

EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average)	50
28. Deepest producing well drilled to Jan. 1, 1983 (feet)...Natural gas	14,300
29. Deepest well drilled to Jan. 1, 1983 (feet) .... Dry hole	20,222

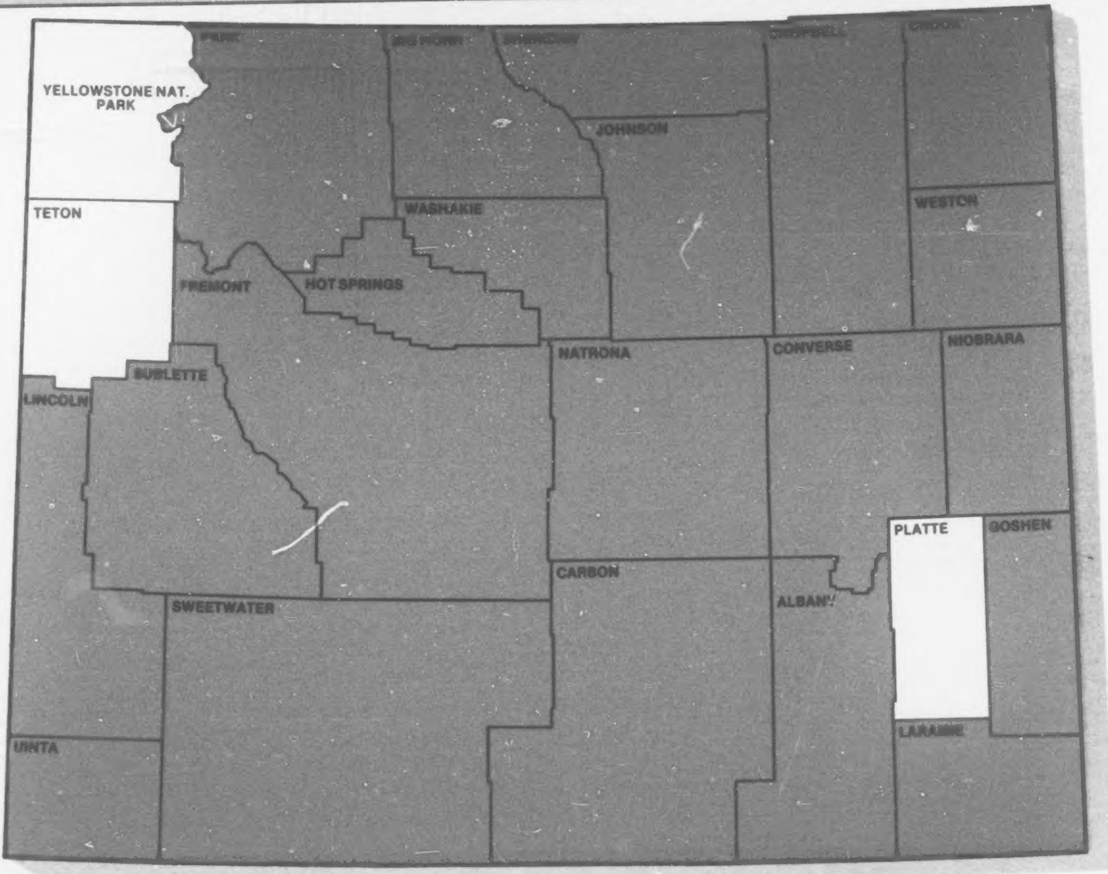
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	7	4.5
Gas wells	114	72.6
Dry holes	36	22.9
Total wells	157	100.0
Average depth per well (feet)		4,726
Total footage (feet)		741,929
Development Wells		
Oil wells	145	7.7
Gas wells	1,581	83.7
Dry holes	120	6.4
Service wells	42	2.2
Total wells	1,888	100.0
Average depth per well (feet)		4,070
Total footage		7,683,174
Total Wells		
Oil wells	152	7.4
Gas wells	1,695	82.9
Dry holes	156	7.6
Service wells	42	2.1
Total wells	2,045	100.0
Average depth per well (feet)		4,120
Total footage		8,425,103

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	46,870	43.7
Gas wells	40,942	38.2
Dry holes	19,374	18.1
Total wells	107,186	100.0

WYOMING


YELLOWSTONE NAT. PARK
PARK
BIG HORN
SHERIDAN
CAMPBELL
CROOK
JOHNSON
TETON
WASHAKIE
WESTON
FREMONT
HOT SPRINGS
NATRONA
CONVERSE
NIOBRARA
SUBLETTE
LINCOLN
PLATTE
GOSHEN
CARBON
ALBANY
SWEETWATER
LARAMIE
UINTA

▨ Counties with crude oil and/or natural gas production

EXTENT AND ECONOMIC VALUE OF OIL AND GAS INDUSTRY

1. Number of counties	23
2. Number of counties with crude oil and/or gas production	20
3. Total land area (acres)	62,209,920
4. Area proved productive of crude oil and/or gas (acres)	2,445,000
5. Estimated nonproductive area leased Jan. 1, 1983 (acres)	31,782,000
6. Percent of total land area productive or leased	55%
7. Wellhead value of crude oil produced all time to Jan. 1, 1983 (thous.)	$25,303,041
8. Average field price of crude oil per barrel in 1982	$29.31
9. Wellhead value of crude oil produced in 1982 (thous.)	$3,467,373
10. Wellhead value of natural gas produced in 1982 (thous.)	$1,229,440

11. Total wellhead value of oil and gas in 1982 (thous.)	$4,696,813
12. Percent of petroleum value to total all minerals	79.4%
13. Principal mineral products in order of value:	
1st	Crude oil
2nd	Natural gas
3rd	Coal
14. Number of employees engaged in oil and gas production	21,030
15. First year of crude oil production	1867
First year of natural gas production	1889
16. First recorded production of:	
Crude oil (barrels) . . . . . in 1894	2,000
Natural gas (Mcf) . . . . . in 1906	100
17. Geophysical activity — crew months worked in 1982	253

PRODUCTION AND RESERVES

18. Year of peak crude oil production 1970
19. Crude oil produced in peak year (barrels) 160,345,000
20. Percent of crude oil produced by stripper wells 4.1%
21. Number of producing wells at end of 1982: Crude oil 11,792
Gas and gas distillate 1,889
Total 13,681
22. Average daily production of crude oil per well at end of 1982 29.8 b/d
23. Percent of wells on artificial lift... 93%
24. Average production (barrels per day):

	Crude Oil	NGL	Total Petroleum Liquids
1979	361,342	28,493*	389,835
1980	345,251	28,500*	373,751
1981	357,707	31,600*	389,307
1982	324,110	30,500*	354,610

*Estimated

25. Production and new reserves found in 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
New reserves found	126	23	149	903
Estimated production	110	18	128	407
Net change in reserves	16	5	45	496

26. Production and new reserves found all time to Dec. 31, 1982:

	Crude Oil (million bbls.)	NGL (million bbls.)	Total Petroleum Liquids (million bbls.)	Natural Gas (billion cu. ft.)
Total reserves found	5,771	683	6,454	20,113
Total production	4,915	294	5,209	9,958
Proved reserves, Dec. 31, 1982	856	389	1,245	10,155

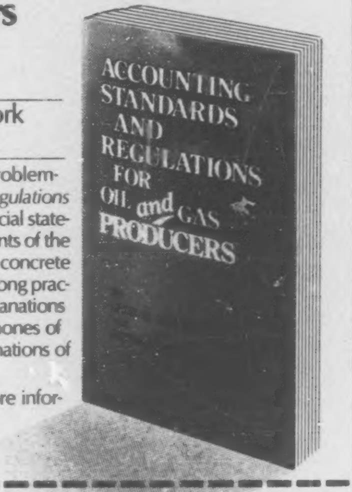
EXPLORATION AND DEVELOPMENT

27. Rotary drilling rigs active in 1982 (average) 143
28. Deepest producing well drilled to Jan. 1, 1983 (feet)... Natural gas 19,610
29. Deepest well drilled to Jan. 1, 1983 (feet) . . . . Dry hole 25,764
30. Wells and footage drilled in 1982:

	Number	Percent
Wildcat Wells		
Oil wells	108	16.3
Gas wells	59	8.9
Dry holes	497	74.8
Total wells	664	100.0
Average depth per well (feet)		8,410
Total footage		5,584,492
Development Wells		
Oil wells	883	60.6
Gas wells	206	14.1
Dry holes	309	21.2
Service wells	60	4.1
Total wells	1,458	100.0
Average depth per well (feet)		6,625
Total footage		9,658,808
Total Wells		
Oil wells	991	46.7
Gas wells	265	12.5
Dry holes	806	38.0
Service wells	60	2.8
Total wells	2,122	100.0
Average depth per well (feet)		7,184
Total footage		15,243,300

31. Total wells drilled all time to Jan. 1, 1983 (excluding service wells):

	Number	Percent
Oil wells	23,514	51.7
Gas wells	3,244	7.1
Dry holes	18,683	41.2
Total wells	45,441	100.0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U.S. Energy Consumption

	Total	*Oil & Gas*	*Percent Oil & Gas*
	Quadrillion BTU's		
1947	33.0	15.9	48.2
1948	33.2	17.0	51.2
1949	31.4	17.4	55.4
1950	33.9	19.6	57.9
1951	36.7	22.1	60.2
1952	36.4	23.1	63.4
1953	37.5	24.3	64.7
1954	36.2	24.7	68.2
1955	39.7	26.8	67.4
1956	41.7	28.5	68.3
1957	41.7	29.0	69.5
1958	41.7	30.2	72.4
1959	43.1	31.7	72.9
1960	44.5	32.8	73.7
1961	45.3	33.7	73.9
1962	47.4	35.4	74.1
1963	49.3	36.8	74.0
1964	51.2	38.0	73.8
1965	53.3	39.3	73.8
1966	56.4	41.8	74.1
1967	58.2	43.6	74.8
1968	61.7	46.6	75.5
1969	64.9	49.4	76.1
1970	67.1	51.6	76.8
1971	68.3	53.0	77.6
1972	71.6	55.7	77.8
1973	74.6	57.3	76.8
1974	72.8	55.2	75.8
1975	70.7	52.7	74.5
1976	74.5	55.5	74.5
1977	76.3	57.1	74.8
1978	78.2	58.0	74.2
1979	78.9	57.8	73.3
1980	76.0	54.6	71.8
1981	74.0	51.9	70.1
1982	70.8	48.7	68.8

Source: U.S. Department of Energy

Geophysical Activity in the U.S.—1973-1982
(Crew Months Worked)

	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*
Florida	99	70	45	19	17	18	17	21	42	20
New York	28	8	14	15	12	2	2	11	7	7
Pennsylvania	64	43	32	25	21	41	33	39	49	37
Virginia	1	8	0	3	0	4	17	24	31	17
West Virginia	56	45	31	13	8	11	15	24	23	9
Other	20	13	4	5	2	9	21	15	15	23
P.A.D. Dist. I	**268**	**187**	**126**	**80**	**60**	**85**	**106**	**134**	**167**	**113**
Illinois	72	67	23	5	4	3	10	5	9	16
Indiana	18	10	1	1	0	0	0	6	0	1
Kansas	16	34	24	36	28	64	88	76	65	98
Kentucky	50	65	31	11	7	1	7	23	12	4
Michigan	232	201	267	266	180	244	111	145	239	159
Nebraska	7	0	1	3	5	2	24	12	17	20
North Dakota	41	72	34	44	96	269	269	242	268	252
Ohio	17	8	2	2	3	2	1	3	8	3
Oklahoma	128	153	151	90	103	234	240	169	301	256
South Dakota	8	30	8	0	1	63	3	2	3	9
Tennessee	0	0	9	5	8	8	26	30	33	24
Other	14	13	5	2	2	0	11	7	0	0
P.A.D. Dist. II	**603**	**653**	**556**	**465**	**437**	**890**	**790**	**720**	**955**	**842**
Alabama	69	71	89	81	13	32	50	126	156	116
Arkansas	46	48	25	32	45	48	35	37	67	117
Louisiana	216	234	272	340	318	560	665	654	501	563
Mississippi	176	76	160	163	199	173	154	168	175	180
New Mexico	94	133	74	79	53	89	85	120	136	156
Texas	642	885	907	914	722	1,095	1,213	1,438	1,745	1,583
P.A.D. Dist. III	**1,243**	**1,447**	**1,527**	**1,609**	**1,350**	**1,997**	**2,202**	**2,543**	**2,780**	**2,715**
Colorado	69	76	37	53	42	61	58	87	56	141
Montana	62	155	40	85	57	155	135	202	388	224
Utah	51	80	65	65	71	163	106	158	122	127
Wyoming	264	363	353	239	183	211	366	274	317	253
Other	3	3	1	17	24	34	28	20	18	29
P.A.D. Dist IV	**449**	**677**	**496**	**459**	**377**	**624**	**693**	**741**	**901**	**774**
Alaska	41	129	100	54	24	16	30	37	82	129
Arizona	2	0	10	0	1	8	54	35	33	9
California	112	178	103	109	65	119	122	157	192	221
Nevada	9	16	16	12	38	45	51	47	41	61
Oregon	0	0	0	0	9	4	0	9	27	25
Other	0	0	1	0	0	2	4	1	3	15
P.A.D. Dist. V	**164**	**323**	**230**	**175**	**137**	**194**	**261**	**286**	**378**	**460**
Undesignated Land	**0**	**0**	**114**	**56**	**502**	**95**	**71**	**190**	**240**	**194**
Total Land	2,727	3,287	3,049	2,844	2,863	3,885	4,122	4,614	5,421	5,098
Marine	**272**	**376**	**367**	**296**	**200**	**263**	**278**	**348**	**456**	**578**
TOTAL U.S.	**2,999**	**3,663**	**3,416**	**3,140**	**3,063**	**4,148**	**4,400**	**4,962**	**5,877**	**5,676**

Source: Society of Exploration Geophysicists.

Estimated Productive and Nonproductive Acreage Under Lease for Oil and Gas 1981-1983

	Total Land Area of State (Acres)	Total Acres Under Lease—Jan. 1st. 1981	1982	1983	Percent of Total Land Area Under Lease — Jan. 1, 1983
Florida	34,617,600	3,005,200	3,715,000	3,755,000	10.8
Maryland	6,330,240	449,200	494,200	494,200	7.8
New York	30,611,840	5,500,000	5,710,000	5,850,000	19.1
Pennsylvania	28,778,240	17,010,160	17,540,160	17,540,160	60.9
Virginia	25,459,200	3,053,150	3,456,940	3,158,906	12.4
West Virginia	15,404,800	13,934,000	14,134,000	13,447,000	87.2
P.A.D. Dist. I	**141,201,920**	**42,951,710**	**44,650,300**	**44,245,266**	**31.3**
Illinois	35,678,720	4,413,000	4,673,000	4,468,000	12.5
Indiana	23,102,080	8,778,810	8,832,960	8,848,070	38.3
Kansas	52,343,680	13,222,400	13,794,900	17,000,000	32.5
Kentucky	25,376,000	4,950,000	5,225,000	5,500,000	21.7
Michigan	36,362,880	12,550,000	14,074,000	14,324,000	37.8
Missouri	44,156,800	504,030	612,298	632,900	1.4
Nebraska	48,949,120	12,584,000	12,570,000	14,416,000	29.5
North Dakota	44,334,720	22,299,000	22,920,000	22,256,000	50.2
Ohio	26,224,000	16,527,377	16,520,376	16,448,304	62.7
Oklahoma	44,020,480	16,886,900	17,402,000	17,691,600	40.2
South Dakota	48,611,200	7,457,500	8,120,000	7,027,000	14.5
Tennessee	26,449,920	6,522,160	8,327,257	8,528,500	32.2
P.A.D. Dist. II	**455,609,600**	**126,695,177**	**133,071,791**	**137,140,374**	**30.1**
Alabama	32,453,120	8,985,085	9,186,076	9,297,939	28.7
Arkansas	33,244,800	9,132,700	10,140,960	12,086,910	36.4
Louisiana	28,755,200	15,962,000	16,100,000	13,550,000	47.1
Mississippi	30,269,440	7,951,400	11,926,500	11,944,100	39.5
New Mexico	77,703,680	30,130,000	30,020,000	31,413,000	40.4
Texas	167,765,760	60,074,600	64,350,000	64,723,000	38.6
P.A.D. Dist. III	**370,192,000**	**132,235,785**	**141,723,536**	**143,014,949**	**38.6**
Colorado	66,410,240	31,809,000	30,639,000	31,577,000	47.5
Montana	93,175,680	36,060,000	38,170,000	42,023,000	45.1
Utah	52,541,440	29,519,000	30,900,000	32,014,000	60.9
Wyoming	62,209,920	38,765,000	36,850,000	34,227,000	55.0
P.A.D. Dist. IV	**274,337,280**	**136,153,000**	**136,559,000**	**139,841,000**	**51.0**
Alaska	362,516,480	3,527,540	4,131,340	5,464,155	1.5
Arizona	72,586,880	12,005,400	20,146,200	22,018,200	30.3
California	100,071,040	4,106,000	5,055,461	6,018,559	6.0
Nevada	70,328,960	17,855,800	23,554,000	31,646,600	45.0
Oregon	62,067,840	4,001,120	4,001,000	9,001,500	14.5
P.A.D. Dist. V	**667,571,200**	**41,495,860**	**56,888,001**	**74,149,014**	**11.1**
Miscellaneous	354,675,200	**	**	**	**
TOTAL U.S.	**2,263,587,200**	**479,531,532**	**512,892,628**	**538,390,603**	**20.7**

** Not Available

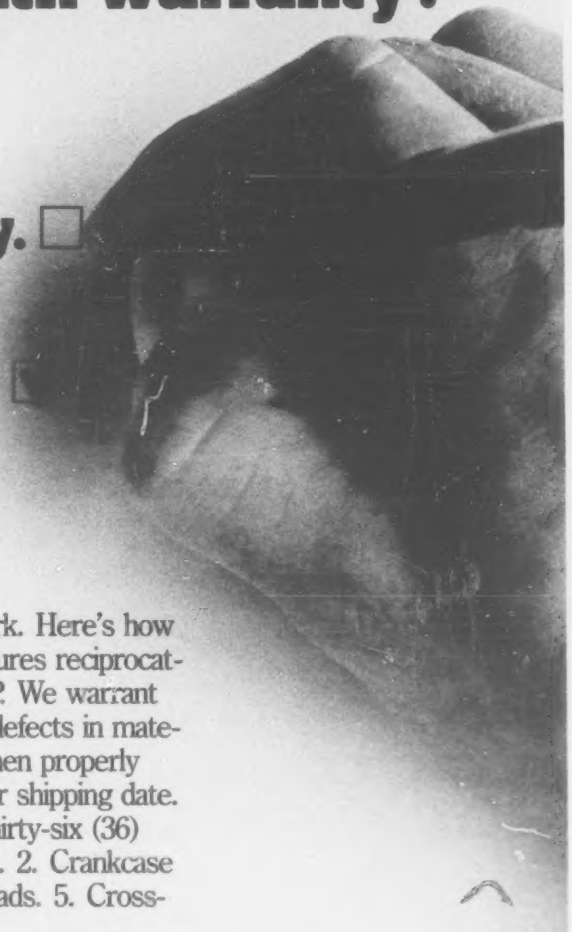
Source: Various state and industry sources.

Question: How many gas compressor manufacturers have a 36-month warranty?

A. Hardly any. ☐

B. Almost everybody. ☐

C. Only one.
Ariel Corporation. ☐



Check "C". This is no time for guess work. Here's how it shakes out. Ariel Corporation manufactures reciprocating gas compressors from 10 to 800 BHP. We warrant all parts of our products to be free from defects in material or workmanship under normal use when properly maintained, for eighteen (18) months after shipping date. We also warrant the following parts for thirty-six (36) months after shipping date: 1. Crankshaft. 2. Crankcase Casting. 3. Connecting Rods. 4. Crossheads. 5. Crosshead Guide Castings.

Those are important parts and these are important times for quality decisions. Over the years, Ariel Corporation has set the standard for pride in workmanship and proven product quality. That's common knowledge. This extended warranty just puts our product where our confidence is.

Call us. We're Ariel Corporation. And we're the only one.

ARIEL CORPORATION
Offices in major oil field centers in the U.S. and Canada
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ARIEL

Rotary Rigs Active in The United States—1973-1982

	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*
Florida	9	9	9	5	6	6	5	4	8	5
New York	2	7	8	9	7	7	9	7	12	15
Pennsylvania	11	14	10	10	15	25	29	29	39	33
West Virginia	20	16	10	12	17	27	30	38	45	50
Other	2	2	2	1	2	6	7	1	6	3
P.A.D. Dist. I	**44**	**48**	**39**	**37**	**47**	**71**	**80**	**79**	**110**	**106**
Illinois	6	7	19	22	16	28	13	25	45	76
Indiana	0	1	2	2	3	4	0	0	1	7
Kansas	28	44	57	51	68	76	66	120	197	157
Kentucky	2	2	1	1	2	3	1	2	5	10
Michigan	19	24	28	24	24	24	25	31	37	31
Nebraska	4	7	9	8	9	10	9	14	15	9
North Dakota	10	12	17	19	24	39	56	83	119	69
Ohio	36	30	21	26	33	47	46	74	98	57
Oklahoma	115	146	178	186	233	258	245	397	698	622
South Dakota	1	1	1	2	3	2	1	2	2	2
Other	1	1	2	0	1	1	0	3	1	3
P.A.D. Dist. II	**222**	**275**	**335**	**341**	**416**	**492**	**462**	**751**	**1,218**	**1,043**
Alabama	13	12	14	17	13	13	13	11	15	15
Arkansas	15	18	14	15	15	14	10	27	34	27
Louisiana	205	203	227	231	292	338	347	427	456	343
Mississippi	29	29	25	32	42	45	40	58	72	42
New Mexico	62	79	71	54	69	76	88	118	135	103
Texas	376	508	637	653	779	855	770	987	1.317	989
P.A.D. Dist. III	**700**	**849**	**988**	**1,002**	**1,210**	**1,341**	**1,268**	**1,628**	**2,029**	**1,519**
Colorado	42	46	43	38	45	41	40	61	82	60
Montana	19	24	27	28	27	30	33	49	82	36
Utah	38	42	26	19	30	32	29	42	69	40
Wyoming	70	107	107	86	118	136	147	155	191	143
Other	1	0	<1	0	1	3	2	3	3	2
P.A.D. Dist. IV	**170**	**219**	**203**	**171**	**221**	**242**	**251**	**310**	**427**	**281**
Alaska	5	9	14	14	15	16	14	14	22	22
Arizona	2	1	<1	1	<1	<1	0	1	1	1
California	51	72	80	89	90	94	96	120	155	129
Nevada	0	1	1	2	3	3	4	5	5	3
Oregon	0	0	<1	1	<1	<1	2	1	2	1
P.A.D. Dist. V	**58**	**83**	**95**	**107**	**108**	**113**	**116**	**141**	**185**	**156**
TOTAL U.S.	**1,194**	**1,474**	**1,660**	**1,658**	**2,002**	**2,259**	**2,177**	**2,909**	**3,969**	**3,105**

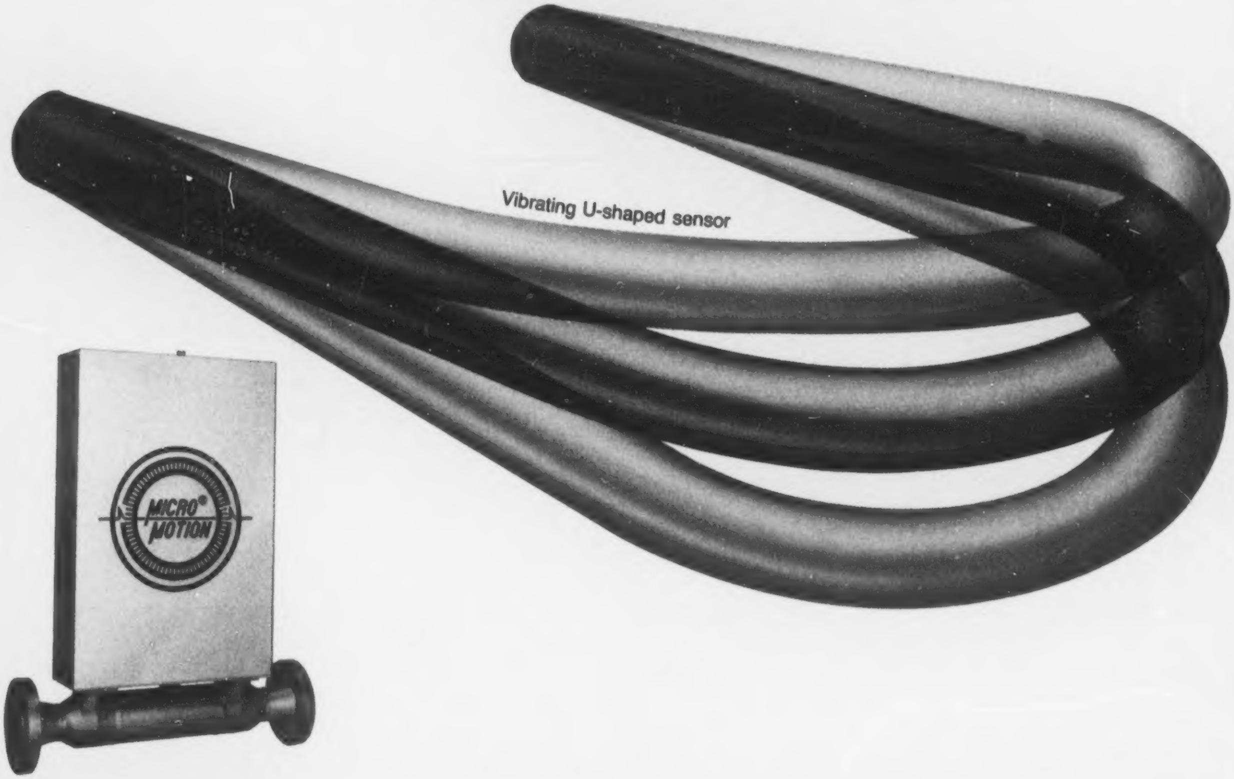
< = Less than.
Source: Hughes Tool Co.

Direct Mass Flow Measurement

We Keep It Simple

MICRO® MOTION

Micro Motion measures the mass flow rate of liquids, gases and slurries — Simply and directly.



- **Accuracy: ± 0.4% of rate**
- **Non-intrusive flow sensor**
- **Remote electronics**
- **UL Approved, Intrinsically Safe**
- **In-line installation**
- **3-A Approved**

Our direct mass flow measurement is unaffected by changing fluid properties — temperature, pressure, density, viscosity and flow profile. Micro Motion gives you accurate, reliable mass flow data — All you need is our meter.

Other companies give you calculated mass flow readings —
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Accurate mass flow measurement CAN be simple.
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MICRO® MOTION

Total New Field Wildcat Wells Drilled in The U.S.—1973-1982

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Florida	35	30	25	13	12	15	14	5	9	11
Maryland	0	1	0	0	0	0	0	0	0	0
New York	14	37	12	37	39	30	22	7	41	12
Pennsylvania	30	16	27	15	29	24	14	23	19	19
Virginia	4	1	2	1	0	2	4	1	3	16
West Virginia	18	19	25	24	21	19	23	15	25	45
Other	3	16	5	4	0	0	0	0	12	2
P.A.D. Dist. I	**104**	**120**	**96**	**94**	**101**	**90**	**77**	**51**	**109**	**105**
Illinois	72	103	106	86	51	77	49	99	123	197
Indiana	101	102	68	86	67	103	64	103	95	112
Kansas	232	285	274	306	298	284	380	379	386	443
Kentucky	87	93	153	113	84	57	81	62	51	99
Michigan	165	251	270	279	326	265	239	317	381	423
Missouri	8	24	16	8	9	7	9	7	15	15
Nebraska	97	145	182	159	204	201	235	274	253	223
North Dakota	56	59	88	79	73	128	99	174	282	308
Ohio	19	11	5	14	11	3	18	1	8	20
Oklahoma	159	198	191	201	210	210	185	173	244	242
South Dakota	21	9	21	26	18	16	28	14	40	33
Tennessee	45	47	85	93	74	85	60	136	140	184
Other	0	2	0	0	1	0	0	0	0	0
P.A.D. Dist. II	**1,062**	**1,329**	**1,459**	**1,450**	**1,426**	**1,436**	**1,447**	**1,739**	**2,018**	**2,299**
Alabama	66	47	59	63	42	59	90	77	68	70
Arkansas	76	88	78	76	78	95	99	109	145	120
Louisiana	490	465	521	425	496	555	542	669	789	673
Mississippi	191	258	226	232	247	243	232	254	337	281
New Mexico	177	192	156	138	114	125	155	225	195	246
Texas	1,632	1,980	2,325	2,325	2,460	2,708	2,726	2,690	2,854	2,586
P.A.D. Dist. III	**2,632**	**3,030**	**3,365**	**3,259**	**3,437**	**3,785**	**3,844**	**4,024**	**4,388**	**3,976**
Colorado	357	296	349	310	282	336	280	318	438	429
Montana	387	316	286	234	230	237	218	282	325	316
Utah	46	47	59	34	79	65	66	61	114	123
Wyoming	300	402	376	335	382	402	306	344	455	486
Other	6	2	1	2	1	6	2	6	5	5
P.A.D. Dist. IV	**1,096**	**1,063**	**1,071**	**915**	**974**	**1,046**	**872**	**1,011**	**1,337**	**1,359**
Alaska	9	7	12	7	14	4	14	14	15	6
Arizona	4	5	2	0	0	4	2	4	6	5
California	79	87	64	76	112	110	99	137	129	106
Nevada	0	2	4	7	10	13	9	12	20	21
Oregon	3	0	0	3	6	0	10	18	17	2
Washington	0	0	0	0	0	0	0	0	0	6
P.A.D. Dist. V	**95**	**101**	**82**	**93**	**142**	**131**	**134**	**185**	**187**	**146**
Alaska Fed. Waters	0	0	0	0	7	3	4	4	0	0
Atlantic Coast	0	0	0	0	0	0	18	4	0	0
Gulf of Mexico-Northern	0	9	31	29	14	14	17	16	22	23
Pacific Coast	0	0	0	0	0	0	0	0	0	4
Total Fed. Waters	**0**	**9**	**31**	**29**	**21**	**17**	**39**	**24**	**22**	**27**
TOTAL U.S.	**4,989**	**5,652**	**6,104**	**5,840**	**6,101**	**6,505**	**6,413**	**7,034**	**8,061**	**7,912**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

Total Exploratory Wells Drilled in The U.S.—1973-1982

	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*
Florida	37	30	27	14	12	16	15	5	9	11
New York	21	49	21	52	50	47	51	20	108	44
Pennsylvania	97	101	109	71	93	96	68	131	405	214
Virginia	4	8	8	3	9	5	4	1	3	29
West Virginia	80	102	91	99	108	165	108	112	155	157
Other	3	18	6	4	0	0	0	0	3	2
P.A.D. Dist. I	**242**	**308**	**262**	**243**	**272**	**329**	**246**	**269**	**683**	**457**
Illinois	196	220	254	247	241	265	233	444	663	649
Indiana	139	168	156	195	277	267	186	324	348	449
Kansas	739	847	879	914	980	1,107	1,078	1,097	1,492	2,110
Kentucky	164	184	313	373	365	351	354	447	508	821
Michigan	176	258	272	282	329	266	246	321	381	423
Missouri	8	24	16	8	9	7	15	15	34	92
Nebraska	102	155	202	188	232	221	258	293	263	227
North Dakota	72	74	109	116	106	163	144	242	377	448
Ohio	60	172	121	171	125	40	125	60	102	146
Oklahoma	352	396	394	434	473	502	484	508	651	682
South Dakota	21	9	22	27	22	17	34	17	42	35
Tennessee	66	85	143	165	156	151	94	188	188	244
Other	0	2	0	0	1	0	0	0	0	0
P.A.D. Dist. II	**2,095**	**2,594**	**2,881**	**3,120**	**3,316**	**3,357**	**3,251**	**3,956**	**5,049**	**6,326**
Alabama	70	58	65	69	44	63	97	80	76	70
Arkansas	79	90	78	76	86	95	105	111	153	127
Louisiana	712	646	708	611	645	781	678	798	957	825
Mississippi	207	292	263	266	260	247	244	280	342	282
New Mexico	191	209	170	172	172	174	201	292	294	351
Texas	2,325	2,907	3,203	3,269	3,549	3,884	4,011	4,274	5,102	5,455
P.A.D. Dist. III	**3,584**	**4,202**	**4,487**	**4,463**	**4,756**	**5,244**	**5,336**	**5,835**	**6,924**	**7,110**
Colorado	442	338	413	372	383	463	439	487	737	741
Montana	435	381	379	321	319	308	298	374	432	427
Utah	70	56	66	39	94	79	86	91	173	172
Wyoming	369	470	461	395	465	477	379	412	575	664
Other	6	2	1	2	1	6	2	6	5	5
P.A.D. Dist. IV	**1,322**	**1,247**	**1,320**	**1,129**	**1,262**	**1,333**	**1,204**	**1,370**	**1,922**	**2,009**
Alaska	14	12	22	7	22	10	16	14	20	8
Arizona	4	5	2	0	0	4	2	4	6	6
California	202	235	205	233	296	370	363	410	492	489
Nevada	0	2	4	7	14	13	10	12	20	24
Oregon	3	0	0	3	2	0	17	22	30	8
Washington	0	0	0	0	0	0	0	0	0	6
P.A.D. Dist. V	**223**	**254**	**233**	**250**	**334**	**397**	**408**	**462**	**568**	**541**
Alaska Fed. Waters	0	0	0	0	7	3	4	4	0	0
Atlantic Coast	0	0	0	0	0	0	18	4	0	0
Gulf of Mexico-Northern	0	14	31	29	14	14	17	16	22	23
Pacific Coast	0	0	0	0	0	0	0	0	0	4
Total Fed. Waters	**0**	**14**	**31**	**29**	**21**	**17**	**39**	**24**	**22**	**27**
TOTAL U.S.	**7,466**	**8,619**	**9,214**	**9,234**	**9,961**	**10,677**	**10,484**	**11,916**	**15,168**	**16,470**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

Total Wells Drilled in The U.S.—1973-1982

	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*
Florida	67	48	47	30	29	29	41	12	23	25
New York	161	348	437	596	538	482	428	494	581	525
Pennsylvania	1,142	1,322	1,496	1,311	1,462	1,748	1,941	2,020	3,554	4,224
Virginia	9	61	36	11	25	31	25	14	41	99
West Virginia	701	780	794	956	1,213	1,404	1,474	1,717	1,882	2,045
Other	4	18	6	9	0	0	9	0	3	2
P.A.D. Dist. I	**2,084**	**2,577**	**2,816**	**2,913**	**3,267**	**3,694**	**3,918**	**4,257**	**6,084**	**6,920**
Illinois	611	823	1,041	1,527	1,174	1,167	1,208	2,127	3,282	3,142
Indiana	259	390	400	507	624	683	500	746	831	1,051
Kansas	2,114	2,825	3,398	3,977	3,933	4,322	4,306	5,161	6,865	9,166
Kentucky	661	697	973	1,094	1,039	961	986	1,294	1,780	3,109
Michigan	281	414	519	522	600	521	527	682	766	810
Missouri	9	101	92	45	54	49	81	31	223	469
Nebraska	163	230	345	323	424	384	453	538	607	453
North Dakota	124	128	213	234	225	327	364	586	743	816
Ohio	1,504	1,790	1,223	1,919	2,593	2,606	3,492	3,269	5,455	4,515
Oklahoma	2,403	3,189	3,796	4,393	4,976	5,859	6,362	9,073	11,329	12,012
South Dakota	22	11	28	32	41	45	50	41	79	70
Other	100	137	203	215	245	222	227	340	315	392
P.A.D. Dist. II	**8,251**	**10,735**	**12,231**	**14,788**	**15,928**	**17,146**	**18,556**	**23,888**	**32,275**	**36,005**
Alabama	102	98	110	133	133	169	214	189	212	207
Arkansas	292	320	329	440	495	450	505	612	887	796
Louisiana	2,940	2,830	3,098	3,476	3,398	3,767	4,078	4,956	5,573	5,060
Mississippi	361	450	453	469	540	489	544	631	758	622
New Mexico	1,098	1,142	1,247	1,006	1,350	1,583	1,607	1,966	2,451	2,298
Texas	8,494	9,808	12,483	12,740	14,759	15,037	16,149	19,253	23,940	26,849
P.A.D. Dist. III	**13,287**	**14,648**	**17,720**	**18,264**	**20,675**	**21,495**	**23,097**	**27,607**	**33,821**	**35,832**
Colorado	840	843	1,198	1,052	1,211	1,224	1,036	1,253	1,707	1,990
Montana	647	673	913	674	761	673	750	882	1,064	1,204
Utah	196	196	196	126	277	277	255	280	421	551
Wyoming	920	1,001	1,301	975	1,307	1,395	1,335	1,407	1,705	2,122
Other	6	2	1	2	1	6	2	6	5	5
P.A.D. Dist. IV	**2,609**	**2,715**	**3,609**	**2,829**	**3,557**	**3,575**	**3,378**	**3,828**	**4,902**	**5,872**
Alaska	35	38	67	81	72	75	73	134	141	203
Arizona	8	11	3	0	0	7	8	4	7	16
California	1,325	2,153	2,615	2,540	2,917	2,475	2,150	2,659	3,224	3,147
Nevada	0	2	4	7	19	16	16	13	24	29
Oregon	3	0	0	3	2	0	21	31	30	8
Other	0	0	0	0	0	0	0	0	0	16
P.A.D. Dist. V	**1,371**	**2,204**	**2,689**	**2,631**	**3,010**	**2,573**	**2,268**	**2,841**	**3,426**	**3,419**
Alaska Fed. Waters	0	0	0	0	11	3	4	4	0	0
Atlantic Coast	0	0	0	0	1	7	18	4	0	0
Gulf of Mexico	0	14	32	30	30	20	24	33	29	54
Pacific Coast	0	0	0	0	0	0	0	0	0	4
Total Fed. Waters	**0**	**14**	**32**	**30**	**42**	**30**	**46**	**41**	**29**	**58**
TOTAL U.S.	**27,602**	**32,893**	**39,097**	**41,455**	**46,479**	**48,513**	**51,263**	**62,462**	**80,537**	**88,106**

Source: American Association of Petroleum Geologists and American Petroleum Institute.

Total Wells Drilled for Oil and Gas
All Time to January 1, 1983

(Excluding Service Wells)

	OIL		GAS		DRY		TOTAL
	Number	Percent	Number	Percent	Number	Percent	Number
Florida	246	27.6	4	0.4	641	72.0	891
Maryland	0	0	72	61.5	45	38.5	117
New York	9,001	68.8	3,083	23.6	999	7.6	13,083
Pennsylvania	245,845	79.3	25,626	8.2	38,373	12.3	309,844
Virginia	43	8.5	345	68.6	115	22.9	503
West Virginia	46,870	43.7	40,942	38.2	19,374	18.1	107,186
P.A.D. Dist. I	**302,005**	**69.9**	**70,072**	**16.2**	**59,547**	**13.7**	**431,624**
Illinois	73,144	61.1	1,415	1.2	45,201	37.7	119,760
Indiana	36,849	45.4	2,075	2.3	23,053	52.3	61,977
Kansas	109,070	51.6	20,735	9.8	81,714	38.6	211,519
Kentucky	47,453	52.4	9,868	10.9	33,259	36.7	90,580
Michigan	12,991	39.8	2,566	7.9	17,099	52.3	32,656
Missouri	579	33.6	193	11.2	949	55.2	1,721
Nebraska	4,859	30.4	190	1.2	10,909	68.4	15,958
North Dakota	4,399	49.8	83	0.9	4,359	49.3	8,841
Ohio	67,688	46.2	42,894	29.3	35,819	24.5	146,401
Oklahoma	214,994	60.4	38,830	10.9	102,301	28.7	356,125
South Dakota	159	16.7	56	5.9	737	77.4	952
Tennessee	1,165	27.0	942	21.8	2,215	51.2	4,322
P.A.D. Dist. II	**573,350**	**54.5**	**119,847**	**11.4**	**357,615**	**34.0**	**1,050,812**
Alabama	826	24.4	510	15.1	2,045	60.5	3,381
Arkansas	16,582	54.4	2,578	8.5	11,346	37.1	30,506
Louisiana	74,352	46.0	26,950	16.7	60,356	37.3	161,658
Mississippi	6,930	32.8	1,139	5.4	13,067	61.8	21,136
New Mexico	26,897	49.3	16,034	29.4	11,608	21.3	54,539
Texas	445,016	58.7	63,797	8.4	248,662	32.9	757,475
P.A.D. Dist. III	**570,603**	**55.4**	**111,008**	**10.7**	**347,084**	**33.7**	**1,028,695**
Colorado	8,778	27.2	5,288	16.3	18,301	56.5	32,367
Montana	9,743	36.8	3,889	14.9	12,799	48.3	26,431
Utah	2,687	38.7	1,049	15.1	3,210	46.2	6,946
Wyoming	23,514	51.7	3,244	7.1	18,683	41.2	45,441
P.A.D. Dist. IV	**44,722**	**40.2**	**13,470**	**12.1**	**52,993**	**47.6**	**111,185**
Alaska	1,063	65.2	114	6.9	453	27.7	1,630
Arizona	53	11.5	34	7.4	374	81.1	461
California	97,873	77.5	2,934	2.3	25,516	20.2	126,323
Nevada	33	11.7	1	0.4	248	87.9	282
Oregon	0	0	11	3.8	281	96.2	292
P.A.D. Dist. V	**99,022**	**76.7**	**3,094**	**2.3**	**26,872**	**20.8**	**128,988**
Atlantic Coast	0	0	0	0	29	100.0	29
Gulf of Mexico Northern	58	21.8	13	4.5	196	73.7	267
Pacific Coast	0	0	0	0	4	100.0	4
Total Federal Waters	**58**	**16.0**	**13**	**0.8**	**229**	**83.4**	**300**
Miscellaneous	**3**	**1.0**	**0**	**0.3**	**554**	**98.7**	**557**
TOTAL U.S.	**1,589,763**	**57.7**	**317,504**	**11.5**	**844,894**	**30.6**	**2,752,161**

Source: *Oil and Gas Journal*, American Petroleum Institute, and American Association of Petroleum Geologists.

Estimated Cost of Drilling and Equipping Wells — 1981

	Wells Drilled (No.)	*Footage Drilled (Thous. Ft.)*	*Total Cost (Thous. $)*	*Average*		
				Depth Well (Ft.)	*Cost/ Well*	*Cost/ Foot*
Alabama	217	1,260	158,555	5,808	$ 730,667	$125.84
Alaska						
Onshore	156	1,603	672,762	10,277	4,312,577	419.69
Offshore	0	0	0	0	0	0
Total	156	1,603	672,762	10,277	4,312,577	419.69
Arkansas	888	4,328	236,999	4,874	266,891	54.76
California						
North	259	1,677	121,750	6,477	470,077	72.60
Central Coastal	339	1,309	163,410	3,862	482,035	124.84
East Central	2,439	5,363	530,632	2,199	217,561	98.94
South	214	778	116,198	3,634	542,981	149.36
Offshore	166	960	315,840	5,783	1,902,651	329.00
Total	3,417	10,087	1,247,830	2,952	365,183	123.71
Colorado	1,878	10,680	676,081	5,687	360,001	63.30
Florida	25	316	56,011	12,626	2,240,440	177.25
Illinois	3,055	8,524	284,900	2,790	93,257	33.42
Indiana	803	1,534	48,025	1,910	59,807	31.31
Kansas	7,431	26,307	821,753	3,540	110,584	31.24
Kentucky	1,940	2,936	106,216	1,514	54,751	36.18
Louisiana						
North	3,272	11,807	668,616	3,608	204,345	56.63
South	1,413	16,096	2,927,669	11,391	2,071,953	181.89
Offshore	934	9,697	3,536,388	10,382	3,786,283	364.69
Total	5,619	37,600	7,132,673	6,692	1,269,385	189.70
Michigan	718	3,168	224,267	4,412	312,350	70.79
Mississippi	781	6,932	693,512	8,875	887,980	100.05
Montana	1,218	6,402	629,663	5,256	516,965	98.35
Nebraska	591	2,873	81,077	4,862	137,186	28.22
New Mexico						
East	1,268	7,772	836,639	6,130	659,810	107.65
West	1,128	5,993	407,692	5,313	361,429	68.03
Total	2,396	13,765	1,244,331	5,745	519,337	90.40

Continued

Estimated Cost of Drilling and Equipping Wells — 1981

	Wells Drilled (No.)	Footage Drilled (Thous. Ft.)	Total Cost (Thous. $)	Average		
				Depth Well (Ft.)	Cost/ Well	Cost/ Foot
North Dakota	868	8,221	976,429	9,471	$ 1,124,919	$118.77
Oklahoma	11,639	57,909	5,243,879	4,975	450,544	90.55
Texas						
District 1	2,420	9,003	642,869	3,720	265,648	71.41
2	877	5,884	532,829	6,710	607,559	90.56
3	2,701	22,615	2,421,268	8,373	896,434	107.07
4	1,371	10,281	1,257,193	7,499	916,990	122.28
5	634	3,820	475,747	6,026	750,390	124.54
6	1,002	7,791	800,808	7,775	799,210	102.79
7B	4,426	15,025	623,873	3,395	140,956	41.52
7C	2,037	11,339	691,928	5,566	339,680	61.02
8	2,424	14,564	1,328,956	6,008	548,249	91.25
8A	2,031	11,858	763,462	5,839	375,905	64.38
9	3,749	12,832	567,779	3,423	151,448	44.25
10	1,138	6,751	576,702	5,932	506,768	85.43
Offshore	329	3,208	1,327,552	9,750	4,035,113	413.83
Total	25,139	134,972	12,010,966	5,369	477,782	88.99
Utah	530	3,619	665,523	6,829	1,255,704	183.90
Wyoming	1,940	13,973	1,792,488	7,203	923,963	128.28
Appalachian*	8,932	29,732	1,133,019	3,329	126,849	38.11
Offshore						
Federal Water						
Alaska	0	0	0	0	0	0
Atlantic Coast	5	72	68,876	14,488	13,775,200	956.61
Gulf of Mexico North**	42	486	302,095	11,568	7,192,738	621.60
Total	47	558	370,971	11,878	7,893,000	664.82
Other U.S.***	588	1,501	157,529	2,553	267,907	104.95
TOTAL U.S.	**80,816**	**388,799**	**36,665,459**	**4,811**	**453,691**	**94.30**

Source: Joint Association Survey.

*New York, Ohio, Pennsylvania and West Virginia.

**Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama and Florida.

***Arizona, Georgia, Idaho, Missouri, Nevada, Oregon, South Dakota, Tennessee and Virginia.

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U.S. Drilling Costs — 1981

	Oil Wells	*Gas Wells*	*Dry Holes*	*Total Wells*
Wells Drilled	38,725	17,533	24,558	80,816
Footage Drilled (000)	161,982	100,258	126,561	388,800
Total Cost (millions)	$13,023	$12,248	$11,395	$36,655
Average Depth (feet)	4,183	5,718	5,154	4,811
Average Cost per Well	$336,289	$698,576	$463,984	$453,691
Average Cost per Foot	$80.40	$122.17	$90.03	$94.30

Note: Includes all costs incurred through "Christmastree."
Source: Joint Association Survey

U.S. Drilling Costs

	Total (Thous. $)	Per Well	Per Foot
1964	2,427,367	55,820	12.86
1965	2,401,437	60,648	13.44
1966	2,360,740	68,386	14.95
1967	2,299,178	72,902	15.97
1968	2,409,360	81,463	16.83
1969	2,610,671	88,554	17.56
1970	2,578,682	94,885	18.84
1971	2,371,492	94,708	19.03
1972	2,814,165	106,224	20.76
1973	3,074,532	117,152	22.50
1974	4,386,989	138,718	28.93
1975	6,571,214	177,793	36.99
1976	7,461,680	191,615	40.46
1977	9,956,453	227,181	46.81
1978	13,061,000	279,950	56.63
1979	16,078,930	331,367	67.70
1980	22,800,356	367,682	77.02
1981	36,665,457	453,691	94.30
1983	N.A.	N.A.	N.A.

Source: Joint Association Survey.

Cost Indices (1967 = 100)

	Oil Field Machinery	Oil Well Casing	Line Pipe	Oil Field Wages
1964	94.8	91.9	103.6	90.8
1965	95.2	96.2	97.9	93.2
1966	96.5	96.2	97.9	96.3
1967	100.0	100.0	100.0	100.0
1968	106.4	101.5	103.9	104.0
1969	112.7	104.5	109.2	110.5
1970	118.4	109.1	112.8	117.8
1971	122.6	120.7	124.7	128.0
1972	127.3	127.3	133.7	137.2
1973	133.2	133.2	139.1	147.7
1974	157.8	170.7	189.8	164.0
1975	196.3	211.5	227.8	186.2
1976	217.6	223.0	234.3	202.8
1977	236.5	244.3	260.5	219.4
1978	261.2	271.6	296.6	249.8
1979	289.7	285.2	303.4	270.3
1980	335.3	327.3	336.1	298.6
1981	397.5	407.6	394.0	332.3
1982	434.5	445.0	N.A.	367.0

Source: U.S. Bureau of Labor Statistics

Estimated Proved World Reserves of Crude Oil as of Jan. 1 (Million Barrels)

	United States	*Canada*	*Latin America*	*Total West. Hemis.*	*Middle East*	*Africa*	*Other East. Hemis.*	*Total East. Hemis.*	*Total Free World*
1973	36,339	8,020	32,602	76,961	355,852	106,402	27,004	489,258	566,219
1974	35,300	7,674	31,640	74,614	350,162	67,304	31,626	449,092	523,706
1975	34,250	7,171	40,578	81,999	403,858	68,299	46,861	519,018	601,017
1976	32,682	6,653	35,368	74,703	368,411	65,085	46,722	480,218	554,921
1977	33,502	6,257	29,609	69,368	367,681	60,570	43,930	472,181	541,549
1978	31,780	5,971	40,370	78,121	366,166	59,200	46,612	471,978	550,099
1979	31,335	6,860	41,246	79,441	369,996	57,892	43,973	471,861	551,302
1980	29,810	6,800	56,473	93,083	361,947	57,072	42,831	461,850	554,933
1981	29,805	6,400	69,490	105,695	362,071	55,148	42,716	459,935	565,630
1982	29,426	7,300	84,982	121,708	362,840	56,172	43,785	462,797	584,505

Source: A.P.I., D.O.E. and Oil & Gas Journal

Estimated Value of U.S. Petroleum Production 1982

	Crude Oil	*Natural Gas*	*Total Petroleum*
	(Thousand Dollars)		
Alabama	646,852	376,815	1,023,667
Alaska	12,440,091	267,330	12,707,421
Arizona	1,040	——	1,040
Arkansas	567,732	207,450	775,182
California	9,830,482	1,095,650	10,926,132
Colorado	964,306	495,550	1,459,856
Florida	800,810	76,800	877,610
Illinois	878,130	3,725	881,855
Indiana	176,125	800	176,925
Kansas	2,171,465	645,655	2,817,120
Kentucky	239,575	85,120	324,695
Louisiana	14,911,589	15,511,700	30,423,289
Maryland	——	25	25
Michigan	1,006,450	474,385	1,480,835
Mississippi	960,015	602,450	1,562,465
Missouri	6,313	——	6,313
Montana	965,972	132,325	1,098,297
Nebraska	212,826	5,500	218,326
Nevada	14,680	——	14,680
New Mexico	2,261,404	2,443,415	4,704,819
New York	27,130	43,785	70,915
North Dakota	1,507,472	136,800	1,644,272
Ohio	450,244	318,500	768,744
Oklahoma	5,082,217	5,222,970	10,305,187
Oregon	——	15	15
Pennsylvania	138,520	298,440	436,960
S. Dakota	37,055	3,100	40,155
Tennessee	36,335	4,425	40,760
Texas	29,433,666	14,041,550	43,475,216
Utah	683,971	163,100	847,071
Virginia	1,585	19,250	20,835
West Virginia	105,587	523,590	629,177
Wyoming	3,467,373	1,229,440	4,696,813
Total U.S.	90,027,012	44,429,660	134,456,672

Source: Based on data from U.S. Dept. of Energy.

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Stripper Wells:

Crude Oil Production From Stripper Wells (Thous. Bbls.)

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Alabama	26	46	87	117	162	139	121	144	125	122
Arizona	2	0	4	5	6	7	5	4	16	23
Arkansas	7,282	6,659	6,748	5,044	5,199	6,172	7,754	7,231	5,689	5,465
California	65,531	61,452	77,497	60,574	52,246	51,410	49,558	45,521	44,110	54,804
Colorado	2,024	1,920	1,829	1,953	2,012	2,017	2,018	1,955	1,989	2,159
Illinois	33,128	28,827	26,024	25,215	24,936	23,614	21,160	20,325	20,167	22,238
Indiana	6,108	5,254	4,920	4,032	4,471	5,255	4,560	4,557	4,019	4,781
Kansas	50,448	45,949	44,615	43,707	44,433	44,190	44,461	43,948	44,545	45,010
Kentucky	9,128	7,314	6,464	6,183	6,173	5,421	4,713	4,549	4,573	4,479*
Louisiana	7,599	7,325	7,502	7,574	8,176	7,740	7,916	7,681	7,657	9,012
Michigan	4,826	4,863	4,883	4,760	4,602	6,233	5,602	5,620	4,717*	2,449
Mississippi	425	438	571	649	1,215	1,349	1,233	1,601	1,890	3,805
Missouri	59	60	56	57	60	60	53	54	127	226
Montana	1,910	2,144	2,024	3,579	2,947	3,255	2,805	2,830	2,710	2,748
Nebraska	1,122	1,196	1,379	1,545	1,758	2,012	2,025	1,865	2,237	2,510
Nevada	0	0	0	0	0	0	0	0	9	0
New Mexico	10,075	10,224	10,835	11,082	11,141	11,547	11,831	12,068	12,924	13,463
New York	1,018	969	896	875	857	813	852	855	824	849
North Dakota	798	854	933	930	1,075	1,146	1,196	1,250	1,225	1,386
Ohio	6,551	6,157	6,362	6,705	6,996	7,251	7,808	8,367	9,049	9,486
Oklahoma	77,967	74,110	73,695	72,530	73,459	74,400	74,175	76,000	79,945	83,249
Pennsylvania	3,441	3,282	3,399	3,199	2,950	2,659	2,565	2,816	2,650	3,606
South Dakota	26	27	21	18	21	15	16	22	25	39
Tennessee	25	45	108	126	140	194	270	387	294	291*
Texas	116,633	112,247	126,387	126,018	129,700	127,886	131,211	136,590	141,825	145,940
Utah	97	132	123	98	262	136	135	180	220	377
Virginia	0	0	3	3	3	2	2	4	10	13
West Virginia	2,677	2.407	2,673	2,478	2,400	2,384	2,255	2,382	2,313	2,607
Wyoming	2,996	1,785	1,898	5,107	4,791	5,225	5,333	5,597	5,211	5,367
TOTAL U.S.	411,924	385,684	411,936	394,163	392,191	392,532	391,633	394,405	401,095	426,502

Number of Producing Stripper Wells As of December 31:

	1972	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Alabama	14	39	44	75	71	78	69	78	68	73
Arizona	2	1	4	6	7	7	7	8	10	12
Arkansas	6,203	6,201	6,094	6,100	6,025	6,736	6,822	6,767	6,820	5,847
California	31,391	31,466	34,559	32,124	29,983	28,328	24,198	25,957	25,400	26,566
Colorado	807	867	818	881	942	990	1,016	1,074	1,143	1,255
Illinois	24,363	23,960	23,279	23,222	23,275	23,499	23,622	23,860	24,501	25,472
Indiana	7,570	4,251	3,962	4,654	4,853	5,056	5,038	5,092	5,022	5,874
Kansas	39,853	40,176	40,176	40,597	41,764	42,273	43,154	44,686	41,876	42,924
Kentucky	14,511	14,201	13,914	13,690	13,817	14,046	13,953	14,028	14,075	14,130*
Louisiana	12,907	12,649	12,808	12,723	13,185	13,189	13,600	12,131	15,889	15,950
Michigan	3,389	3,356	3,370	3,330	3,260	3,276	3,331	3,405	3,325*	3,057
Mississippi	211	217	278	310	617	654	657	813	1,523	2,138
Missouri	137	137	157	163	173	161	144	157	301	440
Montana	1,106	1,295	1,338	1,873	1,918	1,945	1,983	1,996	2,082	2,058
Nebraska	417	526	577	638	812	919	987	1,037	1,223	1,414
Nevada	0	0	0	0	0	0	0	0	4	0
New Mexico	9,122	9,458	9,991	10,274	10,544	10,956	11,401	11,829	12,519	13,226
New York	5,528	[illegible]	4,828	5,231	4,916	4,913	4,700	5,000	5,220	5,345
North Dakota	[illegible]	635	529	569	655	687	741	782	878	836
Ohio	14,863	14,906	15,406	15,482	15,586	16,122	17,006	18,222	19,650	21,982
Oklahoma	54,788	57,000	59,817	58,736	53,357	56,239	59,971	64,893	66,128	69,781
Pennsylvania	32,596	31,539	32,095	31,661	31,274	28,400	27,768	27,925	25,991	25,285
South Dakota	12	12	8	9	10	16	11	10	12	23
Tennessee	41	53	99	133	159	213	265	318	387	398*
Texas	83,666	82,302	87,412	89,027	91,498	92,887	96,713	98,487	103,594	107,596
Utah	53	84	74	48	77	74	95	106	125	196
Virginia	1	0	3	7	7	4	5	7	8	12
West Virginia	13,375	13,500	13,600	13,680	13,800	13,875	13,925	14,000	14,150	14,300
Wyoming	1,716	1,116	926	2,629	3,148	3,387	3,453	3,642	3,252	3,349
TOTAL U.S.	359,471	355,229	366,096	367,872	365,733	368,930	374,635	386,310	395,176	409,539

Source: Interstate Oil Compact Commission and National Stripper Well Association.

*Estimated

1981 Consumption of Motor Gasoline

(Thousand Dollars)

Alabama	44,029
Alaska	5,067
Arizona	32,010
Arkansas	27,095
California	258,163
Colorado	35,867
Connecticut	30,858
Delaware	6,919
Florida	115,359
Georgia	66,904
Hawaii	8,282
Idaho	11,216
Illinois	109,476
Indiana	62,304
Iowa	35,108
Kansas	30,205
Kentucky	41,170
Louisiana	50,081
Maine	11,851
Maryland	45,701
Massachusetts	53,570
Michigan	95,580
Minnesota	47,261
Mississippi	28,771
Missouri	60,205
Montana	10,611
Nebraska	19,012
Nevada	12,108
New Hampshire	9,493
New Jersey	75,019
New Mexico	17,678
New York	135,118
North Carolina	68,445
North Dakota	9,725
Ohio	113,492
Oklahoma	45,772
Oregon	30,262
Pennsylvania	106,535
Rhode Island	8,774
South Carolina	36,409
South Dakota	9,610
Tennessee	56,868
Texas	194,030
Utah	18,296
Vermont	5,574
Virginia	60,254
Washington	44,580
West Virginia	19,158
Wisconsin	49,233
Wyoming	8,930
District of Columbia	4,073
Total U.S.	2,482,111

Source: Department of Transportation.

Value of U.S. Fossil Fuel Production

(Billion Current Dollars)

Year	Crude Oil[a]	Natural Gas[b]	Bituminious Coal and Lignite	Anthracite	Total
1973	13.07	4.98	5.05	0.09	23.19
1975	23.45	9.05	12.47	0.20	45.17
1978	28.60	18.18	14.49	0.18	61.45
1979	39.45	24.16	18.36	0.20	82.17
1980	67.93	32.40	20.20	0.26	120.79
1981	99.40	39.95	21.51	0.24	161.10
1982[c]	90.33	44.58	22.38	0.20	157.49

a) Includes lease condensate. b)Marketed production. c) Preliminary.
Source: U.S. Energy Information Administration

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United States Crude Oil Production—1973-1982

(Thousand Barrels Per Day)

	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*
Florida	89.6	99.6	114.7	121.5	127.8	130.2	129.2	117.2	95.3	70.2
New York	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Pennsylvania	9.0	9.5	9.0	8.3	7.4	7.9	7.9	7.2	10.2	11.7
Virginia	**	**	**	**	**	**	**	**	**	0.1
West Virginia	6.5	7.3	6.8	6.9	6.9	6.5	6.6	6.4	9.5	8.9
P.A.D. Dist. I	**107.7**	**118.9**	**132.9**	**139.0**	**144.4**	**146.9**	**146.0**	**133.1**	**117.3**	**93.2**
Illinois	84.0	75.5	71.4	71.8	70.2	64.0	59.7	62.0	66.0	75.9
Indiana	14.6	13.5	12.7	12.7	14.6	12.8	12.9	13.6	12.9	15.2
Kansas	181.5	169.0	161.9	160.4	157.5	155.0	156.2	164.3	180.3	193.2
Kentucky	23.8	21.5	20.7	20.4	18.0	15.7	15.1	16.2	17.9	20.2
Michigan	40.0	49.4	66.9	83.1	90.3	95.0	95.5	97.8	89.5	86.2
Nebraska	19.8	18.1	16.8	16.9	16.4	16.1	16.6	17.0	18.3	18.8
North Dakota	55.4	54.0	56.0	59.4	63.8	68.0	84.7	110.2	124.4	129.5
Ohio	24.1	24.9	26.2	27.3	28.4	30.6	32.8	35.3	37.1	39.9
Oklahoma	523.8	487.1	446.9	441.0	428.4	412.2	393.6	410.2	422.1	434.6
South Dakota	0.8	1.3	1.3	1.2	1.7	2.4	2.3	2.1	2.7	3.2
Other[1]	0.8	2.2	2.0	1.8	2.4	1.8	1.9	2.4	3.2	3.7
P.A.D. Dist. II	**968.6**	**916.5**	**882.8**	**896.0**	**891.7**	**873.6**	**871.3**	**931.1**	**974.4**	**1,020.4**
Alabama	32.0	36.5	36.9	40.2	50.0	54.3	52.5	60.5	56.6	54.8
Arkansas	49.4	45.3	44.2	49.5	55.3	55.7	51.7	49.8	50.3	51.6
Louisiana	2,278.1	2,020.0	1,783.1	1,657.1	1,542.2	1,459.6	1,341.6	1,281.8	1,231.0	1,255.9
Gulf	2,169.2	1,913.7	1,680.8	1,552.7	1,441.1	1,363.1	1,254.1	1,193.2	1,135.2	1,159.3
Other	108.9	106.3	102.3	104.4	101.1	96.5	87.5	88.6	95.8	96.6
Mississippi	153.7	139.1	127.7	125.9	117.9	115.1	102.3	98.2	93.7	90.5
New Mexico	276.7	270.4	260.5	251.7	239.0	228.4	218.2	205.1	196.1	194.6
Texas	3,547.0	3,457.9	3,347.8	3,250.0	3,117.5	2,942.6	2,789.3	2,670.6	2,589.4	2,535.1
P.A.D. Dist. III	**6,336.9**	**5,969.2**	**5,600.2**	**5,374.4**	**5,121.9**	**4,855.7**	**4,555.6**	**4,366.0**	**4,217.1**	**4,182.5**
Colorado	100.2	102.8	104.4	106.5	108.1	100.8	88.5	81.4	83.0	83.7
Montana	94.8	94.7	90.0	89.7	89.5	83.5	82.1	80.0	84.4	84.7
Utah	89.5	107.8	115.9	93.7	90.7	85.9	76.0	68.2	70.9	61.5
Wyoming	388.8	383.5	372.5	366.5	373.9	376.4	361.3	345.2	357.7	324.1
P.A.D. Dist. IV	**673.3**	**688.8**	**682.8**	**656.4**	**662.2**	**646.6**	**607.9**	**574.8**	**596.0**	**554.0**
Alaska	198.1	193.4	191.3	173.2	463.6	1,229.1	1,400.9	1,616.6	1,609.1	1,695.6
Arizona	2.2	2.0	1.7	1.4	1.2	1.1	1.3	1.1	1.0	0.9
California	920.8	885.0	882.7	890.8	957.8	951.2	965.1	975.2	1,054.7	1,100.2
Nevada	0.3	0.4	0.3	0.4	1.8	3.2	3.4	2.4	1.9	1.7
P.A.D. Dist. V	**1,121.4**	**1,080.8**	**1,076.0**	**1,065.6**	**1,424.4**	**2,184.6**	**2,370.7**	**2,595.3**	**2,666.7**	**2,798.4**
TOTAL U.S.	**9,207.9**	**8,774.2**	**8,374.7**	**8,131.6**	**8,244.6**	**8,707.4**	**8,551.5**	**8,600.3**	**8,571.5**	**8,648.5**

**Less than 100 barrels per day.

[1] Missouri and Tennessee.

Source: Energy Information Administration.

Percent of U.S. Crude Oil Production by "Chase Bank Group" of Companies and "All Other" Groups

	Chase Bank Group of Companies	All Other	Total U.S.
1949	61.8	38.2	100.0
1950	59.5	40.5	100.0
1951	60.1	39.9	100.0
1952	60.4	39.6	100.0
1953	63.9	36.1	100.0
1954	62.4	37.6	100.0
1955	61.3	38.7	100.0
1956	61.6	38.4	100.0
1957	62.6	37.4	100.0
1958	61.7	38.3	100.0
1959	62.1	37.9	100.0
1960	62.9	37.1	100.0
1961	62.8	37.2	100.0
1962	64.2	35.8	100.0
1963	65.0	35.0	100.0
1964	65.9	34.1	100.0
1965	67.5	32.5	100.0
1966	67.8	32.2	100.0
1967	68.9	31.1	100.0
1968	69.4	30.6	100.0
1969	69.5	30.5	100.0
1970	70.7	29.3	100.0
1971	71.3	28.7	100.0
1972	71.3	28.7	100.0
1973	71.3	28.7	100.0
1974	70.4	29.6	100.0
1975	70.3	29.7	100.0
1976	68.7	31.3	100.0
1977	68.8	31.2	100.0
1978	71.1	28.9	100.0
1979	69.5	30.5	100.0
1980	70.6	29.4	100.0
1981	69.2	30.8	100.0
Excluding North Slope			
1977	67.5	32.5	100.0
1978	67.0	33.0	100.0
1979	64.1	35.9	100.0
1980	64.3	35.7	100.0
1981	62.5	37.5	100.0

Source: Chase Manhattan Bank

ENERGY CONVERSIONS

One British thermal unit (Btu) = the quantity of heat required to raise the temperature of one pound of water (approximately one pint) one degree Fahrenheit at or near its point of maximum density.

One barrel (42 gallons) of crude oil = 5,800,000 Btu's of energy; = 5,614 cubic feet of natural gas; = 0.22 tons of bituminous coal; = 1,700 kw hours of electricity.

One cubic foot of natural gas = 1,032 Btu's of energy; = .000178 barrels of oil; = .000040 tons of bituminous coal; = 0.30 kw hours of electricity

One short ton (2,000 pounds) of bituminous coal = 26,200,000 Btu's of energy; = 4.52 barrels of oil; = 25,314 cubic feet of natural gas; = 7,679 kw hours of electricity

One barrel = 42 gallons; = 5,614 cubic feet

One gallon = 231 cubic inches; = .0238 barrels

One cubic foot = 7.48 gallons; = .000178 barrels

One metric ton of crude oil = 2,204 pounds; = 7.46 barrels of domestic oil; = 6.99 barrels of foreign oil

One cubic meter of natural gas = 35.314 cubic feet

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Petroleum Production and New Reserves Found
All Time to December 31, 1981

	Total Liquid Petroleum			Natural Gas		
	(Mil. Bbls.)			*(Bil. Cu. Ft.)*		
	Found	*Produced*	*Proved Reserves Dec. 31, 1981*	*Found*	*Produced*	*Proved Reserves Dec. 31, 1981*
Florida	645	536	109	495	396	99
Maryland	0	0	0	†	†	†
New York	†	†	†	861	597	264
Pennsylvania	1,348	1,316	32	10,747	9,482	1,265
Virginia	†	†	†	†	†	†
West Virginia	888	773	115	17,426	15,482	1,944
P.A.D. Dist. I	**2,881**	**2,625**	**256**	**29,529**	**25,957**	**3,572**
Illinois	3,274	3,145	129	†	†	†
Indiana	499	476	23	†	†	†
Kansas	6,459	5,679	780	37,557	27,114	10,443
Kentucky	823	769	54	4,099	3,538	561
Michigan	1,284	942	342	1,719	467	1,252
Missouri	†	†	†	†	†	†
Nebraska	443	402	41	†	†	†
North Dakota	993	702	291	1,608	954	654
Ohio	995	883	112	6,790	5,825	965
Oklahoma	16,145	14,564	1,581	69,704	54,197	15,507
South Dakota	†	†	†	†	†	†
Tennessee	†	†	†	†	†	†
P.A.D. Dist. II	**16,145**	**27,562**	**3,353**	**121,477**	**92,095**	**29,382**
Alabama	550	303	247	1,086	403	683
Arkansas	1,723	1,594	129	5,554	3,733	1,821
Louisiana	27,422	23,110	4,312	214,023	165,575	48,448
Mississippi	2,286	2,059	227	7,860	5,818	2,042
New Mexico	7,019	5,904	1,115	48,030	33,468	14,562
Texas	67,237	56,498	10,739	291,208	237,520	53,688
P.A.D. Dist. III	**106,237**	**89,468**	**16,769**	**567,761**	**446,517**	**121,244**
Colorado	1,800	1,449	351	6,920	3,692	3,228
Montana	1,300	1,103	197	3,230	1,894	1,336
Utah	1,256	789	467	3,579	1,522	2,057
Wyoming	6,305	5,081	1,224	19,210	9,551	9,659
P.A.D. Dist. IV	**10,661**	**8,422**	**2,239**	**32,939**	**16,659**	**16,280**
Alaska	11,359	3,066	8,293	35,416	2,367	33,049
Arizona	†	†	†	†	†	†
California	25,847	20,324	5,523	34,950	29,236	5,714
Nevada	†	†	†	†	†	†
Oregon	0	0	0	†	†	†
P.A.D. Dist. V	**37,206**	**23,390**	**13,816**	**70,366**	**31,603**	**38,763**
All Other States	**333**	**272**	**61**	**2,360**	**2,167**	**193**
TOTAL U.S.	**173,460**	**151,739**	**36,494**	**824,432**	**614,998**	**209,434**

†Included in All Other States.
Source: American Petroleum Institute, American Gas Association and U.S. Department of Energy.

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Petroleum Production and New Reserves Found
All Time to December 31, 1982

	Total Liquid Petroleum			*Natural Gas*		
	(Mil. Bbls.)			*(Bil. Cub. Ft.)*		
	Found	*Produced*	*Proved Reserves Dec. 31, 1982*	*Found*	*Produced*	*Proved Reserves Dec. 31, 1982*
Florida	681	567	114	509	423	86
Maryland	0	0	0	†	†	†
New York	†	†	†	835	606	229
Pennsylvania	1,356	1,319	37	11,014	9,584	1,430
Virginia	†	†	†	†	†	†
West Virginia	908	781	127	17,876	15,624	2,252
P.A.D. Dist. I	**2,945**	**2,667**	**278**	**30,234**	**26,237**	**3,997**
Illinois	3,316	3,166	150	†	†	†
Indiana	508	480	28	†	†	†
Kansas	6,436	5,756	680	37,701	27,573	10,128
Kentucky	848	777	71	4,178	3,586	592
Michigan	1,264	983	281	1,815	615	1,200
Missouri	†	†	†	†	†	†
Nebraska	439	407	32	†	†	†
North Dakota	1,059	751	309	1,707	1,011	696
Ohio	1,007	896	111	7,066	5,924	1,142
Oklahoma	16,495	14,779	1,716	73,067	55,927	17,140
South Dakota	†	†	†	†	†	†
Tennessee	†	†	†	†	†	†
P.A.D. Dist. II	**31,372**	**27,995**	**3,377**	**125,534**	**94,636**	**30,898**
Alabama	573	326	247	1,186	490	696
Arkansas	1,733	1,611	122	5,866	3,892	1,974
Louisiana	27,416	23,393	4,023	217,710	171,811	45,899
Mississipi	2,333	2,092	241	7,820	6,017	1,803
New Mexico	7,112	6,019	1,093	47,552	34,470	13,082
Texas	75,341	64,955	10,386	297,039	243,908	53,131
P.A.D. Dist. III	**114,509**	**98,396**	**16,113**	**577,173**	**460,588**	**116,585**
Colorado	1,845	1,490	355	7,454	3,903	3,551
Montana	1,370	1,136	234	2,810	1,940	870
Utah	1,283	818	465	3,866	1,613	2,253
Wyoming	6,454	5,209	1,245	20,113	9,958	10,155
P.A.D. Dist. IV	**10,952**	**8,653**	**2,299**	**34,243**	**17,414**	**16,829**
Alaska	11,108	3,693	7,415	37,631	2,629	35,002
Arizona	†	†	†	†	†	†
California	26,289	20,730	5,559	35,353	29,606	5,747
Nevada	†	†	†	†	†	†
Oregon	0	0	0	†	†	†
P.A.D. Dist. V	**37,397**	**24,423**	**12,974**	**72,984**	**32,235**	**40,749**
All Other States	312	275	37	2,376	2,180	196
TOTAL U.S.	**197,487**	**162,409**	**35,078**	**842,544**	**633,290**	**209,254**

† Included in All Other States.

Source: American Petroleum Institute, American Gas Association and U.S. Department of Energy.

Financial Data

Year	Rate of return (%)		Exploration and development outlays (Million dollars)		
	U.S. oil companies	All mfg. companies	Larger companies	Independents	Total
1961	8.7	8.9	2,417	1,583	4,000
1962	8.8	9.8	2,848	1,577	4,425
1963	9.8	10.3	2,452	1,673	4,125
1964	10.1	11.6	2,817	1,633	4,450
1965	11.3	13.0	2,847	1,363	4,210
1966	12.3	13.4	2,990	1,260	4,250
1967	12.6	11.7	3,212	1,153	4,365
1968	12.2	12.1	4,087	1,303	5,390
1969	10.9	11.5	3,786	1,482	5,258
1970	9.9	9.3	3,119	1,656	4,775
1971	9.3	9.7	2,740	1,160	3,900
1972	9.6	10.6	4,225	2,255	6,480
1973	10.5	13.0	5,275	2,865	8,140
1974	14.6	14.9	8,550	3,905	13,355
1975	12.9	11.6	6,830	3,420	10,250
1976	15.2	13.9	8,646	5,864	14,510
1977	14.2	14.2	10,305	6,195	16,500
1978	13.8	15.0	11,275	8,025	19,300
1979	18.2	16.5	15,000	11,750	26,750
1980	18.1	14.1	20,533	15,647	36,200
1981	16.4	13.8	N.A.	N.A.	57,000

Source: Chase Manhattan Bank and Federal Trade Commission

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Percent of U.S. Energy Consumption Supplied By:

Year	Liquid Petroleum	Natural Gas (Dry)	Total
1962	44.6	29.5	74.1
1963	44.2	29.8	74.0
1964	43.5	30.3	73.8
1965	43.6	30.2	73.8
1966	43.2	30.9	74.1
1967	43.5	31.3	74.8
1968	43.8	31.7	75.5
1969	43.7	32.4	76.1
1970	44.0	32.8	76.8
1971	44.4	33.2	77.6
1972	45.8	32.0	77.8
1973	46.7	30.2	76.9
1974	46.0	29.9	76.9
1975	46.3	28.2	74.5
1976	47.2	27.3	74.5
1977	48.7	26.1	74.8
1978	48.6	25.6	74.2
1979	47.1	26.2	73.3
1980	45.0	26.8	71.8
1981	43.2	26.9	70.1
1982	42.9	25.9	68.8

Source: U.S. Dept. of Energy

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Estimated Consumption of Petroleum Products—1981

(Thousand Barrels)

	Motor Gasoline	*Aviation Fuels*[1]	*Middle Distillates*[2]	*Residual Fuel Oil*	*L.P.G.*	*Asphalt Road Oil*	*All Other*[3]	*Total*
Alabama	44,029	992	18,465	4,686	4,273	4,672	10,423	87,540
Alaska	5,067	8,276	6,584	249	140	332	2,798	23,446
Arizona	32,010	3,710	9,848	227	1,180	2,041	6,646	55,662
Arkansas	27,095	504	13,471	2,449	3,484	2,631	6,716	56,350
California	258,163	40,251	68,580	126,463	15,869	12,257	70,724	592,307
Colorado	35,867	4,437	8,849	165	3,488	2,281	7,485	62,572
Connecticut	30,858	1,260	20,160	21,951	1,237	977	10,353	86,796
Delaware	6,919	84	3,400	8,671	809	522	2,728	23,133
Florida	115,359	25,317	30,564	90,347	9,189	6,252	37,566	314,594
Georgia	66,904	11,086	19,660	6,251	6,322	4,684	15,600	130,507
Hawaii	8,282	6,583	6,043	13,311	1,238	234	4,827	40,518
Idaho	11,216	498	4,792	55	816	670	2,448	20,495
Illinois	109,476	13,608	35,093	21,399	31,829	7,592	29,661	248,658
Indiana	62,304	1,933	29,670	7,638	6,714	7,235	15,670	131,164
Iowa	35,108	642	14,748	100	9,158	2,459	8.465	70,680
Kansas	30,205	1,738	13,479	697	6,912	2,330	7,485	62,846
Kentucky	41,170	2,471	19,381	1,150	7,337	2,410	10,004	83,923
Louisiana	50,081	5,317	44,829	55,687	56,366	3,424	29,241	244,945
Maine	11,851	409	9,556	10,090	661	596	4,477	37,640
Maryland	45,701	1,943	19,244	12,396	1,870	3,780	11,543	96,477
Massachusetts	53,570	6,458	32,585	49,673	2,343	1,733	19,867	166,229
Michigan	95,580	3,905	27,649	8,947	5,159	4,426	19,727	165,393
Minnesota	47,261	3,701	18,863	1,460	5,515	4,850	11,053	92,703
Mississippi	28,771	648	13,587	9,725	4,199	2,207	8,045	67,182
Missouri	60,205	3,895	18,549	656	6,819	3,958	12,732	106,814
Montana	10,611	665	6,512	2,519	951	1,291	3,078	25,627
Nebraska	19,012	560	8,320	57	3,725	836	4,407	36,917
Nevada	12,108	4,337	3,560	250	774	621	2,938	24,588
New Hampshire	9,493	63	5,528	4,835	1,011	436	2,868	24,234
New Jersey	75,019	13,479	52,434	38,279	8,063	6,147	26,233	219,654
New Mexico	17,678	753	13,293	856	2,888	1,450	5,037	41,955
New York	135,118	19,980	66,335	97,868	4,828	6,762	44,841	375,732
North Carolina	68,445	2,559	23,584	5,677	6,975	2,692	14,900	124,832
North Dakota	9,725	321	7,722	1,130	1,344	928	2,868	24,038
Ohio	113,492	4,595	47,710	5,920	37,340	8,606	29,521	247,184
Oklahoma	45,772	2,366	15,821	745	6,622	4,180	10,213	85,719
Oregon	30,262	1,455	16,604	6,407	1,166	2,293	7,905	66,092
Pennsylvania	106,535	7,298	62,628	30,340	7,111	6,762	29,871	250,545
Rhode Island	8,774	235	4,047	2,227	257	1,242	2,309	19,091
South Carolina	36,409	607	10,520	5,142	2,588	1,813	7,695	64,774
South Dakota	9,610	213	4,430	161	1,647	658	2,239	18,958
Tennessee	56,868	2,776	21,036	1,239	1,403	3,405	11,752	98,479
Texas	194,030	21,409	101,104	68,671	132,769	9,878	71,493	599,354
Utah	18,296	1,407	7,270	1,064	1,431	1,156	4,127	34,751
Vermont	5,574	36	4,040	351	579	61	1,469	12,110
Virginia	60,254	7,045	24,810	13,072	2,732	2,938	15,040	125,891
Washington	44,580	8,407	18,443	16,505	1,448	2,244	12,452	124,079
West Virginia	19,158	273	9,812	1,001	3,008	922	4,617	38,791
Wisconsin	49,233	1,824	20,851	871	4,566	2,428	10,773	90,546
Wyoming	8,930	246	12,521	2,009	1,877	1,217	3,638	30,438
Dist. of Columbia	4,073	466	2,198	389	†	†	979	8,105
TOTAL U.S.	**2,482,111**	**253,041**	**1,078,782**	**762,028**	**430,030**	**155,519**	**699,547**	**5,861,058**

[1] Does not include aviation fuel for military use

[2] Includes Kerosene

[3] Estimated

† Dist. of Columbia included in Maryland

Source: Federal Highway Administration, U.S. Department of Energy, Ethyl Corporation, and The Asphalt Institute.

Estimated Consumption of Petroleum Products—1982
(Thousand Barrels)

	Motor Gasoline	Aviation Fuels[1]	Middle Distillates[2]	Residual Fuel Oil	L.P.G.	Asphalt Road Oil	All Other[3]	Total
Alabama	43,819	867	17,166	6,350	3,742	4,490	9,322	85,756
Alaska	5,598	8,886	7,597	301	180	461	2,827	25,850
Arizona	31,943	3,635	8,120	297	1,400	1,907	5,773	53,075
Arkansas	26,749	686	13,845	1,803	3,452	2,399	5,954	54,888
California	253,822	38,869	67,871	81,392	13,761	12,300	51,058	519,073
Colorado	36,029	4,658	9,394	14	3,906	2,030	6,856	62,887
Connecticut	30,594	898	20,890	21,349	1,199	984	9,261	85,175
Delaware	6,725	75	3,093	6,289	748	554	2,165	19,649
Florida	116,671	24,243	23,529	63,079	7,516	6,273	23,394	264,705
Georgia	67,104	11,617	18,700	5,562	5,385	4,920	13,832	127,120
Hawaii	8,312	4,526	4,570	13,323	1,779	215	3,969	36,694
Idaho	10,876	367	4,527	223	871	677	2,165	19,706
Illinois	107,675	13,845	32,960	15,507	22,729	6,089	18,222	217,027
Indiana	57,890	3,209	29,504	4,856	5,775	6,765	13,170	121,169
Iowa	33,829	552	16,662	321	10,110	2,399	7,818	71,691
Kansas	29,433	1,189	14,043	993	10,105	2,368	7,096	65,227
Kentucky	40,991	2,919	18,647	1,197	6,016	3,629	8,961	82,360
Louisiana	51,074	5,549	36,608	48,260	74,821	3,721	26,822	246,855
Maine	12,039	414	9,505	15,803	708	584	4,751	43,804
Maryland	44,973	2,019	17,003	11,898	1,729	3,936	9,923	91,481
Massachusetts	53,238	6,172	33,031	42,762	1,825	1,907	16,959	155,894
Michigan	90,480	3,574	23,562	4,285	6,011	3,260	15,997	147,169
Minnesota	45,981	3,595	21,111	1,732	6,337	4,859	10,224	93,839
Mississippi	27,426	1,911	12,179	5,570	3,790	2,153	6,495	59,524
Missouri	59,402	3,698	21,518	856	7,566	4,121	11,847	109,008
Montana	10,771	513	5,814	1,668	1,223	1,107	2,586	23,682
Nebraska	18,871	576	9,269	198	4,050	923	4,150	38,037
Nevada	11,673	4,061	3,536	119	826	830	2,586	23,631
New Hampshire	9,364	62	5,332	4,106	1,115	461	2,526	22,966
New Jersey	75,536	27,756	46,952	34,241	5,292	6,058	23,875	219,710
New Mexico	17,729	762	8,539	716	2,301	1,814	32,836	64,697
New York	133,747	3,215	65,169	97,868	4,125	6,765	31,873	342,762
North Carolina	67,890	2,944	22,516	5,971	5,872	2,768	13,169	121,130
North Dakota	9,597	225	7,235	1,171	1,223	953	2,406	22,810
Ohio	108,598	4,468	42,813	2,488	34,503	9,225	24,657	226,752
Oklahoma	45,934	3,239	15,018	700	6,828	4,305	9,261	85,285
Oregon	28,836	1,535	15,116	10,927	1,118	2,091	7,277	66,900
Pennsylvania	104,384	7,177	55,997	20,789	6,064	6,765	18,402	219,578
Rhode Island	8,591	227	4,109	1,791	277	1,507	1,985	18,487
South Carolina	36,091	489	10,067	2,965	2,205	1,507	6,495	59,819
South Dakota	9,358	217	5,168	51	1,887	800	2,105	19,586
Tennessee	56,081	1,822	19,863	748	1,944	5,228	10,464	96,150
Texas	195,278	31,784	100,307	62,069	165,188	9,840	62,844	627,310
Utah	17,477	1,644	6,617	886	1,288	1,169	3,548	32,629
Vermont	5,641	47	2,894	372	729	92	1,143	10,918
Virginia	59,372	6,889	23,211	9,591	2,502	2,522	12,689	116,776
Washington	44,075	9,183	18,392	14,029	1,443	2,245	10,885	100,252
West Virginia	19,306	240	8,102	1,443	2,270	830	3,909	36,100
Wisconsin	47,192	1,712	20,779	2,212	5,002	2,645	9,682	89,224
Wyoming	8,558	215	11,154	1,634	2,157	1,138	3,007	27,863
District of Columbia	4,060	287	2,221	1,527	(4)	(4)	2,165	10,260
TOTAL U.S.	**2,446,683**	**259,262**	**1,021,825**	**634,302**	**462,893**	**156,589**	**601,386**	**5,582,940**

[1] Does not include aviation fuel for military use

[2] Includes Kerosene

[3] Estimated

[4] Dist. of Columbia included in Maryland

Source: Federal Highway Administration, U.S. Department of Energy, Ethyl Corporation, and The Asphalt Institute.

Estimated Average Number of Employees in Important Segments of the Petroleum Industry in 1982

	Mining	*Manufacturing*		*Transportation*		*Wholesale*	*Retail*	
	Crude Oil and Natural Gas Extraction	*Petroleum Refining*	*Lubricating Oils and Greases*	*Pipelines (Except Natural Gas)*	*Gas Production and Distribution*	*Petroleum and Petroleum Products*	*Gasoline Service Stations*	*Total*
Alabama	1,954	420	31	101	3,052	4,396	7,257	17,211
Alaska	7,772	167	0	1,237	291	397	1,122	10,986
Arizona	217	103	0	97	992	1,478	7,195	10,082
Arkansas	4,240	796	N.D.	331	2,446	2,597	4,300	14,710
California	40,416	28,181	883	1,071	10,462	15,792	59,447	156,252
Colorado	29,300	600	39	170	2,543	3,253	8,970	44,875
Connecticut	200	410	80	N.D.	1,310	2,910	8,920	13,830
Delaware	30	1,054	10	1	378	509	1,427	3,409
Florida	1,103	84	189	64	2,278	7,086	28,271	39,075
Georgia	139	103	125	510	3,510	6,091	14,764	25,242
Hawaii	N.D.	408	0	0	359	476	3,402	4,645
Idaho	203	2	0	15	479	1,542	2,076	4,317
Illinois	7,300	7,400	800	1,050	9,400	12,000	23,000	60,950
Indiana	923	3,036	307	474	4,556	4,301	14,584	28,181
Iowa	15	0	52	177	1,188	2,951	11,139	15,522
Kansas	17,108	4,017	N.D.	2,125	4,789	2,667	7,364	38,070
Kentucky	3,554	3,607	7	160	3,035	3,114	9,096	22,573
Louisiana	95	13	N.A.	1	7	7	9	132
Maine	20	0	0	N.D.	N.D.	1,246	2,461	3,727
Maryland	36	0	197	0	0	3,346	12,540	16,119
Massachusetts	216	1,076	1,317	40	19,667	14,804	55,582	92,702
Michigan	4,600	2,000	400	200	8,300	5,200	20,400	41,100
Minnesota	366	910	N.D.	192	2,519	2,827	14,552	21,366
Mississippi	10,999	1,512	87	168	2,253	3,383	4,624	23,026
Missouri	215	N.D.	2,295	255	5,061	7,368	13,976	29,170
Montana	5,482	1,060	0	97	117	1,776	2,291	10,823
Nebraska	1,037	31	167	106	3,783	1,717	6,008	12,849
Nevada	575	48	2	22	552	554	3,342	5,095
New Hampshire	1	0	1	3	316	552	2,411	3,284
New Jersey	93	9,018	945	160	2,042	4,755	18,659	35,672
New Mexico	15,431	1,051	22	297	3,853	1,863	4,003	26,520
New York	2,484	10,967	388	131	7,143	13,755	28,645	63,513
North Carolina	8	0	169	115	2,504	6,979	9,659	19,434
North Dakota	7,857	263	0	168	263	2,438	2,164	13,153
Ohio	12,548	5,847	654	696	7,867	6,436	28,622	62,670
Oklahoma	102,227	8,138	302	2,676	5,686	7,617	6,608	133,254
Oregon	122	0	4	0	1,463	2,178	7,395	11,162
Pennsylvania	6	13	1	1	9	11	27	68
Rhode Island	114	0	N.D.	0	877	601	2,262	3,854
South Carolina	12	N.D.	N.D.	N.D.	612	3,528	6,449	10,601
South Dakota	160	2	0	61	140	1,468	2,620	4,451
Tennessee	895	70	46	45	2,103	4,403	11,688	19,250
Texas	292,522	41,429	931	5,565	30,161	26,629	35,933	433,170
Utah	5,401	875	N.D.	105	2,961	1,970	4,129	15,441
Vermont	N.D.	0	N.D.	0	132	320	1,685	2,137
Virginia	300	200	0	100	2,600	7,600	13,900	24,700
Washington	228	1,611	N.D.	87	1,560	3,146	9,188	15,820
West Virginia	6,083	530	70	133	5,541	2,062	3,853	18,272
Wisconsin	19	148	126	151	2,945	4,928	12,032	20,349
Wyoming	21,030	1,611	2	447	1,013	1,152	2,990	28,245
Dist. of Columbia	35	139	0	0	732	329	1,078	2,313
TOTAL U.S.	**605,691**	**138,950**	**10,649**	**19,605**	**175,850**	**218,508**	**564,119**	**1,733,372**

N.D. = Non-Disclosure
N.A. = Not Available

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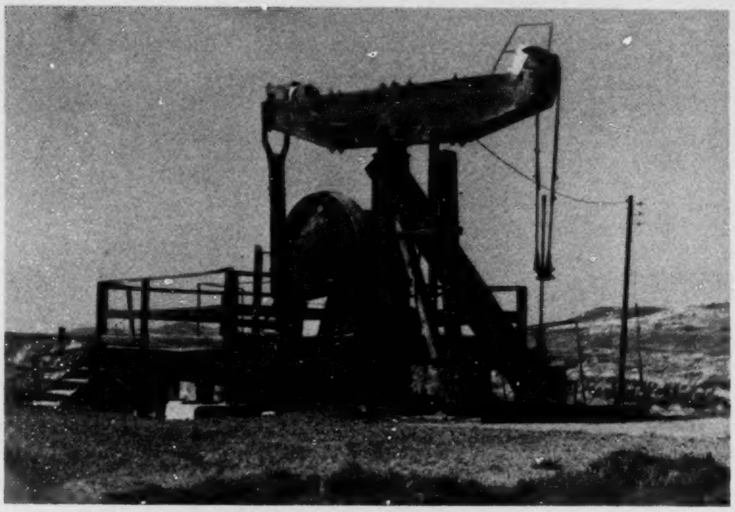

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U.S. Petroleum Demand

	Petroleum demand (Thous. B/D)			% U.S. energy consump.		
Year	Domestic	Export	Total	Liquid petroleum	Natural gas (dry)	Total
1975	16,335	209	16,544	46.3	28.2	74.5
1976	17,476	223	17,699	47.2	27.3	74.5
1977	18,447	243	18,690	48.7	26.1	74.8
1978	18,862	362	19,224	48.6	25.6	74.2
1979	18,531	471	19,002	47.0	26.2	73.2
1980	17,220	541	17,561	45.1	26.9	72.0
1981	16,063	595	16,658	43.3	26.9	70.2
1982	15,299	815	16,114	42.8	25.9	68.7

Source: U.S. Department of Energy

Statistical Summary of the Petroleum Producing Industry—1953-1982

	PRODUCTION (Thous. b/d)			IMPORTS[2] (Thous. b/d)			OTHER SUPPLY[3]		PETROLEUM DEMAND (Thous. b/d)			CRUDE OIL VALUE	CRUDE OIL PRICE
Year	Crude Oil[1]	NGL	Total	Crude Oil	Refined Products	Total	(Thous. b/d)	TOTAL SUPPLY	Domestic	Export	Total	(Mil. $)	$ per Bbl.
1953	6,458	654	7,112	648	386	1,034	20	8,166	7,624	401	8,025	6,327	2.68
1954	6,342	691	7,033	656	396	1,052	23	8,108	7,784	355	8,139	6,425	2.78
1955	6,807	771	7,578	782	466	1,248	34	8,860	8,493	368	8,861	6,870	2.77
1956	7,151	800	7,951	934	502	1,436	43	9,430	8,822	430	9,252	7,297	2.79
1957	7,170	808	7,978	1,022	552	1,574	42	9,594	8,860	568	9,428	8,079	3.09
1958	6,710	807	7,517	953	747	1,700	64	9,281	9,146	276	9,422	7,380	3.01
1959	7,053	879	7,932	966	814	1,780	86	9,798	9,538	211	9,749	7,473	2.90
1960	7,035	929	7,964	1,015	800	1,815	146	9,925	9,807	202	10,009	7,420	2.88
1961	7,183	991	8,174	1,045	872	1,917	179	10,270	9,985	174	10,159	7,566	2.89
1962	7,332	1,021	8,353	1,126	956	2,082	175	10,610	10,410	168	10,578	7,769	2.90
1963	7,542	1,098	8,640	1,131	992	2,123	202	10,965	10,753	208	10,961	7,966	2.89
1964	7,614	1,155	8,769	1,198	1,060	2,258	217	11,244	11,032	202	11,234	8,017	2.88
1965	7,804	1,210	9,014	1,238	1,230	2,468	220	11,702	11,523	187	11,710	8,147	2.86
1966	8,295	1,284	9,579	1,225	1,348	2,573	246	12,398	12,095	198	12,293	8,727	2.88
1967	8,811	1,409	10,220	1,128	1,409	2,537	292	13,049	12,569	307	12,876	9,375	2.91
1968	9,095	1,504	10,599	1,290	1,550	2,840	348	13,787	13,404	231	13,635	9,795	2.94
1969	9,238	1,590	10,828	1,409	1,757	3,166	339	14,333	14,148	233	14,381	10,427	3.09
1970	9,637	1,660	11,297	1,324	2,095	3,419	355	15,071	14,709	259	14,968	11,174	3.18
1971	9,462	1,694	11,156	1,681	2,244	3,925	439	15,520	15,225	224	15,449	11,693	3.39
1972	9,441	1,744	11,185	2,216	2,525	4,741	444	16,370	16,380	222	16,602	11,707	3.39
1973	9,208	1,738	10,946	3,244	3,012	6,256	485	17,687	17,321	231	17,552	13,058	3.89
1974	8,774	1,688	10,462	3,477	2,635	6,112	491	17,065	16,666	220	16,886	21,581	6.87
1975	8,374	1,633	10,007	4,105	1,951	6,056	514	16,577	16,335	209	16,544	23,116	7.67
1976	8,131	1,604	9,735	5,287	2,026	7,313	592	17,640	17,476	223	17,699	24,230	8.19
1977	8,245	1,618	9,863	6,594	2,193	8,787	568	19,218	18,447	243	18,690	25,791	8.57
1978	8,708	1,567	10,275	6,194	2,008	8,202	492	18,969	18,862	362	19,224	28,478	9.00
1979	8,552	1,583	10,135	6,452	1,937	8,389	581	19,105	18,531	471	19,002	39,368	12.64
1980	8,596	1,573	10,169	5,219	1,646	6,865	716	17,750	17,020	541	17,561	67,933	21.19
1981	8,572	1,609	10,181	4,141	1,599	5,740	558	16,479	16,000	595	16,595	100,415	31.77
1982	8,649	1,550	10,199	3,323	1,625	4,948	655	15,802	16,114	815	15,299	90,027	28.52

	NUMBER OF NEW WELLS DRILLED						FOOTAGE DRILLED		Total Proved Reserves on Dec. 31† (Mil. Bbls.)	Total New Reserves Added† (Mil. Bbls.)	AVERAGE HOURLY EARNINGS	
Year	Oil	Gas*	Dry	Service**	Total	Percent Dry	Total (Mil. Ft.)	Per Well Drilled			Crude Oil $ per Hour	All Mfg. Industries $ per Hour
1953	25,762	3,806	18,449	1,262	49,279	37.4	198.8	4,034	34,383	4,040	2.10	1.74
1954	29,773	3,977	19,168	1,012	53,930	35.5	219.0	4,061	34,805	2,980	2.15	1.78
1955	31,567	3,613	20,742	760	56,682	36.6	226.3	3,992	35,451	3,386	2.20	1.86
1956	30,730	4,543	21,838	1,049	58,160	37.5	233.9	4,022	36,337	3,784	2.35	1.95
1957	28,012	4,620	20,983	1,409	55,204	38.1	233.1	4,223	35,987	2,562	2.47	2.05
1958	24,578	4,803	19,043	1,615	50,039	38.1	198.2	3,961	36,740	3,466	2.54	2.11
1959	25,800	5,029	19,265	1,670	51,764	37.2	209.2	4,041	38,241	4,370	2.65	2.19
1960	21,186	5,258	17.584	2,733	46,751	37.6	190.7	4,079	38,429	3,090	2.69	2.26
1961	21,101	5,664	17,106	3,091	46,962	36.4	192.1	4,091	38,835	3,353	2.80	2.32
1962	21,249	5,848	16,682	2,400	46,179	36.1	198.6	4,301	38,101	2,914	2.83	2.39
1963	20,288	4,751	16,347	2,267	43,653	37.4	184.4	4,224	38,644	3,052	2.92	2.46
1964	20,620	4,855	17,488	2,273	45,236	38.7	189.9	4,198	38,738	3,274	2.95	2.53
1965	18,761	4,724	16,025	1,922	41,432	38.7	181.5	4,380	39,376	3,880	3.03	2.61
1966	16,780	4,377	15,227	1,810	38,194	40.0	166.0	4,348	39,781	3,285	3.13	2.72
1967	15,329	3,659	13,246	1,584	33,818	39.2	144.7	4,280	39,991	3,892	3.25	2.83
1968	14,331	3,456	12,812	2,315	32,914	38.9	149.3	4,536	39,305	3,141	3.38	2.94
1969	14,368	4,083	13,736	1,866	34,053	40.3	160.9	4,726	37,775	2,401	3.59	3.19
1970	13,020	3,840	11,260	1,347	29,467	38.2	142.4	4,834	46,704*	12,997*	3.83	3.36
1971	11,858	3,830	10,163	1,449	27,300	37.2	128.3	4,700	45,367	2,685	4.16	3.57
1972	11,306	4,928	11,057	1,464	28,755	38.5	138.4	4,813	43,126	1,796	4.46	3.81
1973	9,902	6,385	10,305	1,010	27,602	37.3	138.9	5,032	41,755	2,555	4.80	4.06
1974	12,784	7,240	11,674	1,195	32,893	35.5	153.8	4,676	40,600	2,614	5.33	4.40
1975	16,408	7,580	13,247	1,862	39,097	33.9	178.5	4,566	38,950	1,937	6.05	4.80
1976	17,059	9,085	13,621	1,690	41,455	32.9	185.3	4,471	39,904	1,919	6.59	5.19
1977	18,912	11,378	14,692	1,497	46,479	31.6	215.0	4,626	37,774	1,431	7.13	5.63
1978	17,775	13,064	16,218	1,456	48,513	33.4	231.4	4,770	38,107	3,179	8.12	6.14
1979	19,383	14,681	15,752	1,447	51,263	30.7	243.2	4,744	36,425	1,980	8.79	6.68
1980	27,026	15,730	18,089	1,617	62,462	29.0	288.9	4,625	36,533	3,814	9.72	7.27
1981	37,671	17,894	22,973	1,999	80,537	28.5	366.2	4,548	36,494	3,651	10.81	7.80
1982	40,298	18,953	26,549	2,306	88,106	30.1	401.5	4,557	35,079	2,256	11.93	8.50

NOTES:

†Includes Natural Gas Liquids.
*Includes condensate wells since 1956.
**Includes stratigraphic and core tests.
[1] Includes Alaskan North Slope.
[2] Excludes Imports for U.S. Strategic Storage.
[3] Includes net processing gain, unaccounted for crude oil and other hydrocarbons.

Source: Petroleum Supply, Demand, Crude Oil Value and Crude Oil Price from Energy Information Administration. Wells and Footage Drilled from *Oil and Gas Journal*, A.P.I. and A.A.P.G. Reserves from American Petroleum Institute, American Gas Association and Department of Energy. Average Hourly Earnings from U.S. Bureau of Labor Statistics based on 1972 Standard Industrial Classification.

DATA SOURCES

The data in this publication have been collected from various published sources including, where necessary, estimates based on the best information available. The individual sources, to which credit is gratefully acknowledged, are as follows:

Line No.	
1	World Almanac
2	Various state and industry sources
3	World Almanac
4-5	Estimated by IPAA from various state and industry sources such as Petroleum Information Corporation
6	Sum of lines 4 and 5 divided by line 3
7-10	Estimated by IPAA
11	Sum of lines 9 and 10
12-13	U.S. Department of Energy and Department of Interior, based on 1981 values
14	State agencies cooperating with the U.S. Bureau of Labor Statistics
15-16	Energy Information Administration, *World Oil,* Arnold & Kemnitzer, *World Petroleum Report,* and *AIME Statistical Yearbook*
17	Society of Exploration Geophysicists
18-19	Energy Information Administration, *World Oil,* Arnold & Kemnitzer, *World Petroleum Report* and *AIME Statistical Yearbook*
20	*Stripper Well Report,* Interstate Oil Compact Commission and National Stripper Well Association: based on 1981 production
21-23	*World Oil* and other industry sources
24	Energy Information Administration except some small states and 1982 Natural Gas Liquids production estimated by IPAA
25-26	American Petroleum Institute, American Gas Association and U.S. Department of Energy
27	Hughes Tool Company
28-30	*World Oil* and American Petroleum Institute
31	*World Petroleum Statistical Yearbook, Oil and Gas Journal,* International Oil Scouts Association and American Petroleum Institute

Individual state data may not add to United States total in all cases because data for some miscellaneous states are not available.

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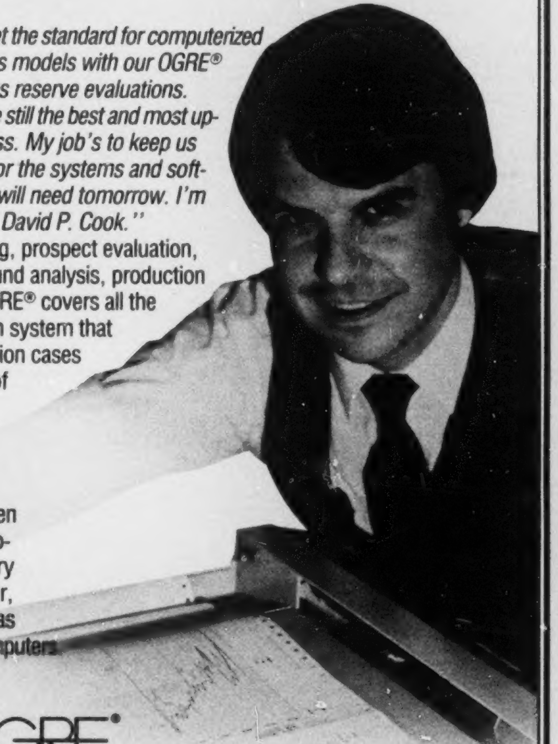

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DEFINITIONS

Acreage Under Lease — The number of land acres leased by the owner for searching out petroleum.

Artificial Lifting — Any method used to stimulate the production of oil and gas in excess of the flow resulting under natural reservoir pressures, e.g. pumping, secondary or tertiary recovery.

API Gravity — Weight per unit of liquid hydrocarbon volume as measured by a system recommended by the API.

Barrel — The standard volumetric measure for petroleum, equivalent to 42 U.S. gallons.

Casing — Heavy steel pipe used in oil wells to seal off fluids from the bore hole and to prevent the walls from caving in.

Chase Bank Group — A group of 25 of the largest U.S. oil companies from which Chase Manhattan Bank gathers annual financial and operating data. All other oil companies are aggregated to represent the independent sector of the domestic industry.

Christmastree — An assembly of flanges and valves mounted on the casing at the surface through which a well is produced, used for testing the well and shutting it in if necessary.

Condensate — A mixture of liquid hydrocarbons at atmospheric conditions which occur in a gaseous state underground, sometimes known as distillate or natural gasoline.

Crew Months — The standard time measure of the geophysical search for petroleum.

Crude Oil — Hydrocarbons in liquid unprocessed form that vary significantly in properties such as API gravity, viscosity and sulfur content.

Cubic Foot — The standard measure for natural gas; the amount required to fill a volume of one cubic foot under given atmospheric conditions.

Development Well — Either an oil, gas or dry hole drilled within an area known to be productive.

Distillate Fuel Oil — One of the petroleum fractions produced by conventional distillate, includes fuel oil and diesel fuel.

Dry Hole — A completed well which is not productive of oil and gas in commercial quantities.

Dry Natural Gas — Natural gas that does not contain dissolved liquid hydrocarbons.

Exploratory Well — Either an oil, gas or dry hole drilled to discover an oil-bearing formation or its limits.

Field — An area that encompasses a group of oil and gas wells, underlaid by one or more reservoirs.

Gas Well — An exploratory or development well completed for the production of natural gas.

Geophysical Activity — The search for geological structures which are potential petroleum-bearing formations. A group of geophysicists explode charges in shot holes and interpret on geophones the data from seismic shocks.

Liquified Petroleum Gas (LPG) — Butane, propane and other light products separated from natural gasoline or crude oil by fractionation or other processes. At atmospheric pressure, it reverts to the gaseous state.

Middle Distillates — A general classification that includes distillate fuel oil and kerosene.

Natural Gas — Hydrocarbons in gaseous form or mixed with crude oil; classified as associated, dissolved or non-associated.

Natural Gas Liquids (NGL) — Hydrocarbons found with natural gas that are recoverable by condensation or absorption, such as LPG or natural gasoline.

New Field Wildcat Well — A type of exploratory well drilled in an unproved area where there has been no previous production.

Oil Well — An exploratory or development well completed for the production of crude oil.

Petroleum — Includes in its broadest sense the entire spectrum of hydrocarbons — gaseous, liquid and solid.

Pipeline — A line of tubes with pumping machinery that transports oil or gas from the wellhead to the storage tank or refinery.

Product — Any commodity made from oil or gas through the refinery process.

Proved Reserves — The estimated quantity of crude oil, natural gas or NGL that is shown with reasonable certainty to be recoverable from known fields under existing economic and operating conditions.

Refinery — A plant for separating crude oils and converting the major components into finished products.

Reservoir — A permeable sedimentary rock formation which is porous enough to allow oil, gas and water to move freely. Hydrocarbons are found in the sealed portions known as traps.

Residual Fuel Oil — The heavy, high-viscosity leftover from the refining process, used mainly for industrial purposes.

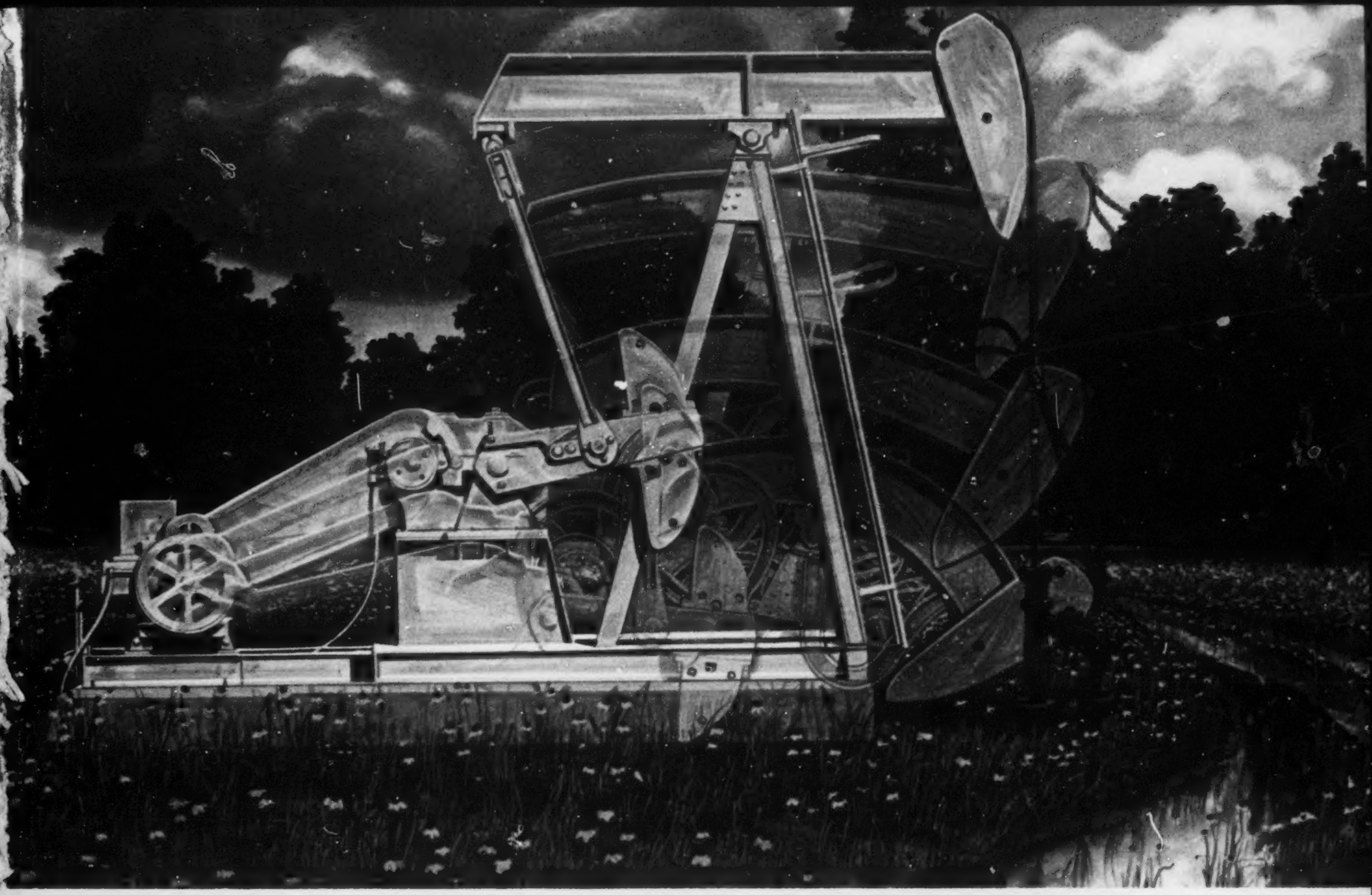
Rotary Drilling Rig — A derrick equipped with modern rotary equipment capable of drilling a bore hole with a bit attached to a rotating column of steel pipe, in contrast to a cable tool rig which drills on the percussion principle.

Severance Tax — A tax levied by some states on each barrel of oil or each thousand cubic feet of gas produced.

Stratigraphic Test — A hole drilled to gather information about a stratigraphic formation such as the general permeability and porosity of the rocks; includes core tests.

Stripper Well — A producing well which pumps or "strips" less than 10 barrels of oil or 60 Mcf of natural gas per day.

Well — A hole drilled to find or produce hydrocarbons, or to provide services related to their production.



To rejuvenate tired wells, call Halliburton.

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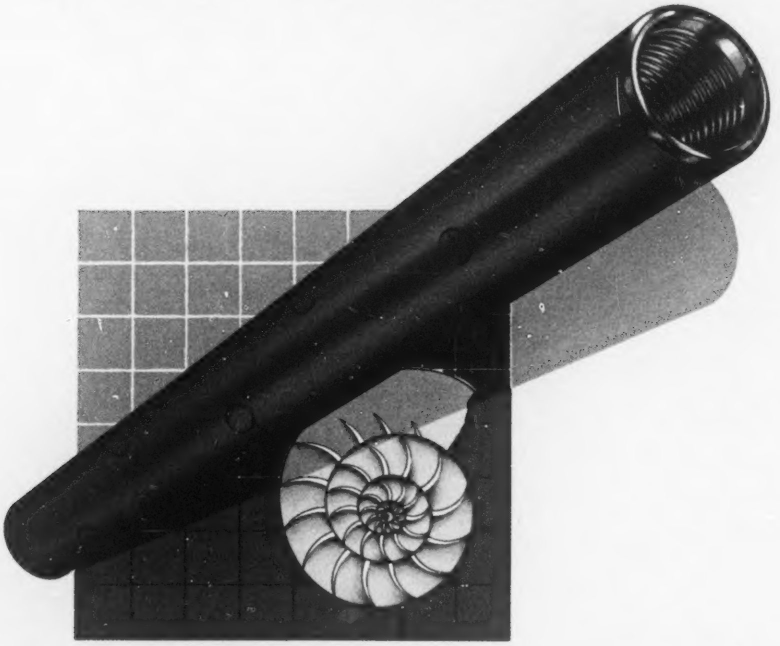

The Welex Spiral Jet Perforator surpasses existing perforating knowledge.

The system produces superior radial flow at the well bore second only to open hole completion. It excels not only in routine perforating, but also in special applications such as fractured reservoirs, unconsolidated formations and remedial cement operations.

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*patent pending

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